Satellite

User's Manual

A30

Satellite

SATELLITE A30 SATELLITE A30 SATELLITE A30

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TOSHIBA Satellite A30 Series Portable Personal Computer User's Manual

First edition August 2003

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CE

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Safety Instructions

Use the following safety guidelines to help protect yourself and your computer.

When Using Your Computer

Do not operate your portable computer for an extended period of time with the base resting directly on your body. With extended operation, heat can potentially build up in the base. Allowing sustained contact with the skin could cause discomfort or, eventually, a burn.

- Do not attempt to service the computer yourself. Always flow installation instructions closely.
- Do not carry a battery in your pocket, purse, or other container where metal objects (such as car keys) could short-circuit the battery terminals. The resulting excessive current follow can cause extremely high temperatures and may result in damage from burns.
- Be sure that noting rests on your AC adapter's power cable and that the cable is not located where it can be tripped over or stepped on.
- Place the AC adapter in a ventilated area, such as a desk top or on the floor, when you use it to run the computer or to charge the battery. Do not cover the AC adapter with papers or other items that will reduce cooling; also, do not use the AC adapter while it is inside a carrying case.
- Use only the AC adapter and batteries that are approved for use with this computer. Use of another type of battery or AC adapter may risk fire or explosion.
- Before you connect the computer to a power source, ensure that the voltage rating of the AC adapter matches that of the available power source.

  903 115 V/60Hz in most of North and south America and some Far Eastern countries such as Taiwan.

  904 100 V/50Hz in eastern Japan and 100 V/60Hz in western Japan.

  905 230 V/50 Hz in most of Europe, the Middle East, and the Far East.

- If you use an extension cable with your AC adapter, ensure that the total ampere rating of the products plugged in to the extension cable does not exceed the ampere rating of the extension cable.
- To remove power from the computer, turn it off, remove the battery, and disconnect the AC adapter from the electrical out let.
- To help avoid the potential hazard of electric shock, do not connect or disconnect any cables or perform maintenance or reconfiguration of this product during an electrical storm.
- When setting up the computer for work, place it on a level surface.
- Do not dispose of batteries in a fire. They may explode. Check with local authorities for disposal instructions.
- When travelling, do not check the computer as baggage. You can put your computer through an X-ray security machine, but never put your computer through a metal detector. If you have the computer checked by hand, be sure to have a charged battery available in case you are asked to turn on the computer.
- When travelling with the hard drive removed from the computer, wrap the drive in a non-conducting material, such as cloth or paper. If you have the drive checked by hand, be ready to install the drive in the computer. Your can put the hard drive through an X-ray security machine, but never, but the drive through a metal detector.
- When travelling, do not place the computer in overhead storage compartments where it could slide around. Do not drop your computer or subject it to other mechanical shocks.
- Protect your computer, battery, and hard drive from environmental hazards such as dirt, dust, food, liquids, temperature extremes, and overexposure to sunlight.
- When you move your computer between environments with very different temperature and/or humidity ranges, condensation may form on or within the computer. To avoid damaging the computer, allow sufficient time for the moisture to evaporate before using the computer.

When taking the computer from low-temperature conditions into a warmer environment or from high-temperature conditions into a cooler environment, allow the computer to acclimate to room temperature before turning or power.

- When you disconnect a cable, pull on its connector or on its strain relief loop, not on the cable itself. As you pull out the connector, keep it evenly aligned to avoid bending any connector pins. Also, before you connect a cable make sure both connectors are correctly oriented and aligned.
- Before you clean your computer, turn if off, unplug it from its power source, and remove the battery.
- Handle components with care. Hold a component such as a memory module by its edges, not its pins.

When using your telephone equipment, basic safety precautions should always be followed to reduce the risk of fire, electric shock and injury to persons, including the following:

- Do not use this product near water, for example, near a bathtub, washing bowl, kitchen sink or laundry tub, in a wet basement or near a swimming pool.
- Avoid using a telephone (other than a cordless type) during an electrical storm. There may be a remote risk of electric shock from lightning.
- Do not use the telephone to report a gas leak in the vicinity of the leak.
- Use only the power cord indicated in this manual.
- Replace only with the same or equivalent type battery recommended by the manufacturer.
- Dispose of used batteries according to the manufacturer's instructions.

EMC Regulatory Information

EU Declaration of Conformity

TOSHIBA declares, that the product: Satellite A30 conforms to the following Standards:

Supplementary Information:	“The product complies with the requirements of the Low Voltage Directive 73/23/EEC and the EMC Directive 89/336/EEC and/or the R&TTE Directive 1999/05/EEC.”

This product is carrying the CE-Mark in accordance with the related European Directives. Responsible for CE-Marking is TOSHIBA Europe, Hammfelddamm 8, 41460 Neuss, Germany.

Canadian Regulatory Information (Canada Only)

This digital apparatus does not exceed the Class B limits for radio noise emissions from digital apparatus as set out in the Radio Interference Regulation of the Canadian Department of Communications.

Note that Canadian Department of Communications (DOC) regulations provide, that changes or modifications not expressly approved by TOSHIBA Corporation could void your authority to operate this equipment.

This Class B digital apparatus meets all requirements of the Canadian Interference- Causing Equipment Regulations.

Cet appareil numérique de la class B respecte toutes les exgences du Règlement sur le matériel brouilleur du Canada.

CD-ROM, DVD-ROM, CD-R/RW, CD-RW/DVD-ROM, DVD-R/-RW, DVD-RAM, DVD-Multi drives Safety Instruction

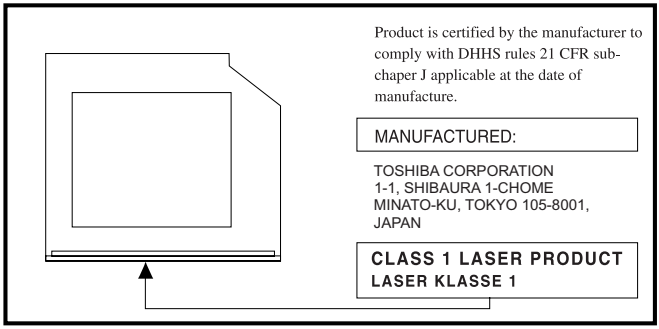
CD-ROM, DVD-ROM, CD-R/RW, CD-RW/DVD-ROM, DVD-R/-RW, DVD-RAM and DVD Multi drives employ a laser system. To ensure proper use of this product, please read this instruction manual carefully and retain for future reference. Should the unit ever require maintenance, contact an authorized service location.

Use of controls, adjustments or the performance of procedures other than those specified may result in hazardous radiation exposure.

To prevent direct exposure to the laser beam, do not try to open the enclosure.

Location of the required label

Sample shown below. Location of the label on the drive and manufacturing information may vary.


Product is certified by the manufacturer to comply with DHHS rules 21 CFR sub-chaper J applicable at the date of manufacture.
MANUFACTURED:
TOSHIBA CORPORATION
1-1, SHIBAURA 1-CHOME
MINATO-KU, TOKYO 105-8001,
JAPAN
CLASS 1 LASER PRODUCT
LASER KLASSE 1

CAUTION: This appliance contains a laser system and is classified as a "CLASS 1 LASER PRODUCT". To use this model properly, read the instruction manual carefully and keep it for your future reference. In case of any trouble with this model, please contact your nearest "AUTHORIZED service station". To prevent direct exposure to the laser beam, do not try to open the enclosure. Use of controls or adjustments or performance of procedures other than those specified in the owner's manual may result in hazardous radiation exposure.

***VORSICHT**: Dieses Gerät enthält ein Laser- System und ist als "LASERSCHUTZKLASSE 1 PRODUKT" klassifiziert. Für den richtigen Gebrauch dieses Modells lesen Sie bitte die Bedienungsanleitung sorgfältig durch und bewahren diese bitte als Referenz auf. Falls Probleme mit diesem Modell auftreten, benachrichtigen Sie bitte die nächste "autorisierte Service-Vertretung". Um einen direkten Kontakt mit dem Laserstrahl zu vermeiden darf das Gerät nicht geöffnet werden.*

***ADVARSEL:** Denne mærking er anbragt udvendigt på apparatet og indikerer, at apparatet arbejder med laserstråler af klasse 1, hviket betyder, at der anvendes laserstrlier af svageste klasse, og at man ikke på apparatets yderside kan bilve udsat for utilladellg kraftig stråling.*

APPARATET BOR KUN ÅBNES AF FAGFOLK MED SÆRLIGT KENDSKAB TIL APPARATER MED LASERSTRÅLER!

Indvendigt i apparatet er anbragt den her gengivne advarselsmækning, som advarer imod at foretage sådanne indgreb i apparatet, at man kan komme til at udsætte sig for laserstråling.

***OBS!** Apparaten innehåller laserkomponent som avger laserstråining överstigande gränsen för laserklass 1.*

***VAROITUS.** Suojakoteloa si saa avata. Laite sisältää laserdiodin, joka lähetää näkymätöntä silmilie vaarallista lasersäteilyä.*

USE OF CONTROLS OR ADJUSTMENTS OR PERFORMANCE OF PROCEDURES OTHER THAN THOSE SPECIFIED IN THE OWNER'S MANUAL MAY RESULT IN HAZARDOUS RADIATION EXPOSURE.

***VORSICHT:** DIE VERWENDUNG VON ANDEREN STEURUNGEN ODER EINSTELLUNGEN ODER DAS DURCHFÜHREN VON ANDEREN VORGÄNGEN ALS IN DER BEDIENUNGSANLEITUNG BESCHRIEBEN KÖNNEN GEFÄHRLICHE STRAHLENEXPOSITIONEN ZUR FOLGE HABEN.*

Description on Laser specification

The optical drive such as CD-ROM, DVD-ROM, CD-R/RW, CD-RW/DVD-ROM, DVD-R/-RW, DVD-RAM and DVD Multi drive that is used in this computer is equipped with laser. The classification label with the following sentence is affixed to the surface of the drive.

CLASS 1 LASER PRODUCT
LASER KLASSE 1
LUOKAN 1 LASERLAITE
APPAREIL A LASER DE CLASSE 1
KLASS 1 LASER APPARAT

The drive with the above label is certified by the manufacturer that the drive complies with the requirement for laser product on the date of manufacturing pursuant to article 21 of Code of Federal Regulations by the United States of America, Department of Health & Human Services, Food and Drug Administration.

In other countries, the drive is certified to comply with the requirement pursuant to IEC 825 and EN60825 on class 1 laser product.

This computer is equipped with the optical drive in the following list according to the model.

Manufacturer	Type
Matsushita	SR-8177
TOSHIBA	SD-C2612
TOSHIBA	SD-R6112
Matsushita	UJDA750
TOSHIBA	SD-R2412
TOSHIBA	SD-R2512
Panasonic	UJ-811B
TEAC	DW-224E
TEAC	DV-W22E-85

Modem warning notice

Conformity Statement

The equipment has been approved to [Commission Decision “CTR21”] for pan- European single terminal connection to the Public Switched Telephone Network (PSTN).

However, due to differences between the individual PSTNs provided in different countries/regions the approval does not, of itself, give an unconditional assurance of successful operation on every PSTN network termination point.

In the event of problems, you should contact your equipment supplier in the first instance.

Network Compatibility Statement

This product is designed to work with, and is compatible with the following networks. It has been tested to and found to confirm with the additional requirements conditional in EG 201 121.

Germany	- ATAAB AN005, AN006, AN007, AN009, AN010, and DE03, 04, 05, 08, 09, 12, 14, 17
Greece	- ATAAB AN005, AN006 and GR01, 02, 03, 04
Portugal	- ATAAB AN001, 005, 006, 007, 011 and P03, 04, 08, 10
Spain	- ATAAB AN005, 007, 012, and ES01
Switzerland	- ATAAB AN002
All other countries/regions	- ATAAB AN003, 004

Specific switch settings or software setup are required for each network, please refer to the relevant sections of the user guide for more details.

The hookflash (timed break register recall) function is subject to separate national type approvals. It has not been tested for conformity to national type regulations, and no guarantee of successful operation of that specific function on specific national networks can be given.

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Please take notice that unauthorized copying, modification, assignment, transmission and disposition may be subject to claims for damages and penalties.

Lead Warning

Handling the AC adaptor cord on this product will expose you to lead, a chemical known to the State of California to cause birth defects or other reproductive harm.

Wash hands after handling.

HTT (Hyper-Threading Technology)

This is an innovative technology created by Intel and built into new CPUs, including the one in this computer. It allows a CPU to do two things at once (in technical terms, to run multiple task threads from a program) which gives it a faster response time and better performance.

Not all models will come with CPU with HTT technology.

Bluetooth Technology

Some models of the computer will come with Bluetooth technology built into it. Bluetooth was developed jointly by Ericsson, IBM, Intel, Nokia and TOSHIBA. It uses a shortwave radio frequency to connect devices such as cell phones, personal digital assistants, and computers. Essentially, any device with a Bluetooth chip can connect to and communicate with any other device with the same type of chip as long as the two are within range of one another.

Not all models come with Bluetooth technology.

General Precautions

TOSHIBA computers are designed to optimise safety, minimize strain and withstand the rigors of portability. However, certain precautions should be observed to further reduce the risk of personal injury or damage to the computer.

Be certain to read the general precautions below and to note the cautions included in the text of the manual.

Stress injury

Carefully read the Safety Instruction Manual. It contains information on prevention of stress injuries to your hands and wrists that can be caused by extensive keyboard use. Chapter 3, *Getting Started*, also includes information on work space design, posture and lighting that can help reduce physical stress.

Heat injury

- Avoid prolonged physical contact with the bottom of the computer. If the computer is used for long periods, its surface can become very warm. While the temperature will not feel hot to the touch, if you maintain physical contact with the computer for a long time (if you rest the computer on your lap, for example) your skin might suffer low-heat injury.
- If the computer has been used for a long time, avoid direct contact with the metal plate supporting the I/O ports. It can become hot.
- The surface of the AC adaptor can become hot when in use. This condition does not indicate a malfunction. If you need to transport the AC adaptor, disconnect it and let it cool before moving it.
- Do not lay the AC adaptor on a material that is sensitive to heat. The material could be damaged.

Pressure or impact damage

Do not apply heavy pressure to the computer or subject it to strong impact.

Excessive pressure or impact can damage computer components or otherwise cause malfunctions.

PC Card overheating

Some PC cards can become hot with prolonged use. Overheating of a PC Card can result in errors or instability in the PC Card operation. Also be careful when you remove a PC Card that has been used for a long time.

Mobile phone

Use of mobile phones can interfere with the audio system. Computer operation is not impaired but it is recommended that a distance of 30cm be maintained between the computer and a mo-bile phone in use.

LCD Display

Small bright dots may appear on your TFT display when you turn on your PC. Your display contains an extremely large number of thin-filmtransistors (TFT) and is manufactured using high-precision technology. Any small bright dots that may appear on your display are an intrinsic characteristic of the TFT manufacturing technology.

Central Processing Unit ("CPU") Performance Disclaimer:

CPU performance in your computer product may vary from specifications under the following conditions:

- use of certain external peripheral products use of battery power instead of AC power
- use of certain multimedia games or videos with special effects
- use of standard telephone lines or low speed network connections
- use of complex modelling software, such as high end computer aided design applications
- use of computer in areas with low air pressure (high altitude > 1,000 meters or > 3,280 feet above sea level)
- use of computer at temperatures outside the range of 5°C to 30°C (41°F to 96°F) or > 25°C (77°F) at high altitude (all temperature references are approximate).

CPU performance may also vary from specifications due to design configuration.

Under some conditions, your computer product may automatically shut-down. This is a normal protective feature designed to reduce the risk of lost data or damage to the product when used outside recommended conditions. To avoid risk of lost data, always make back-up copies of data by periodically storing it on an external storage medium. For optimum performance, use your computer product only under recommended conditions. Read additional restrictions in your bundled documents.

Contact TOSHIBA Technical Service and Support for more information.

CE compliance

This product and the original options are designed to observe the related EMC (Electromagnetic compatibility) and safety standards. However, TOSHIBA should not guarantee that this product still observes these EMC standards if options or cables not produced by TOSHIBA are connected or implemented. In this case the persons who have connected / implemented those options / cables have to assure that the system (PC plus options / cables) still fulfils the required standards. To avoid in general EMC problems following advice should be observed:

- Only CE marked options should be connected / implemented
- Only best shielded cables should be connected

Working environment

This product was designed to fulfil the EMC (electromagnetic compatibility) requirements to be observed for so-called "Residential, commercial and light industry environments".

TOSHIBA do not approve the use of this product in working environments other than the above mentioned "Residential, commercial and light industry environments".

For example, the following environments are not approved:

- Industrial Environments (environments with a mains voltage >230V~)
- Medical Environments
- Automotive Environments
- Aircraft Environments

If this product is supplied with a network port, please refer to the paragraph "Network connection".

Any consequences resulting from the use of this product in working environments that are not approved are not the responsibility of TOSHIBA Europe GmbH.

The consequences of the use of this product in non-approved working environments may be:

- Interference with other devices or machines in the near surrounding area
- Malfunction of, or data loss from, this product caused by disturbances generated by other devices or machines in the near surrounding area

Therefore TOSHIBA strongly recommend that the electromagnetic compatibility of this product should be suitably tested in all non-approved working environments before use. In the case of automobiles or aircraft, the manufacturer or airline respectively should be asked for permission before use of this product.

Furthermore, for general safety reasons, the use of this product in environments with explosive atmospheres is not permitted.

Network connection (class A warning)

If this product has networking capabilities and will be connected to a network, Class A radiation limits will be observed (in accordance with technical conventions). This means that if the product will be used in a domestic environment, other devices in the near surrounding may suffer interference. Consequently, please do not use this product in such environments (for example a living room), otherwise you could be held responsible for any ensuing interference.

Information on the secure use of the CD-RW

Please adhere to the following information on the use of the CD-RW to minimise the risk of unsuccessful storing process. As the storing may be unsuccessful despite your adhering to these information, for example because of a defective storing medium, you should even if the software indicates a successful storage, always check if the data has been stored successfully.

About TOSHIBA Wireless Solution

Not all models come with a built in Wireless LAN card.

Wireless Interoperability

The TOSHIBA Wireless LAN Mini PCI Card products are designed to be interoperable with any Wireless LAN product that is based on Direct Sequence Spread Spectrum (DSSS) radio technology, and is compliant to:

- The IEEE 802.11 Standard on Wireless LANs, as defined and approved by the Institute of Electrical and Electronics Engineers.
- The Wireless Fidelity (WiFi) certification as defined by the WECA Wireless Ethernet Compatibility Alliance.

Wireless LAN and your Health

Wireless LAN products, like other radio devices, emit radio frequency electromagnetic energy. The level of energy emitted by Wireless LAN devices however is far much less than the electromagnetic energy emitted by wireless devices like for example mobile phones.

Because Wireless LAN products operate within the guidelines found in radio frequency safety standards and recommendations, TOSHIBA believes Wireless LAN is safe for use by consumers. These standards and recommendations reflect the consensus of the scientific community and result from deliberations of panels and committees of scientists who continually review and interpret the extensive research literature.

In some situations or environments, the use of Wireless LAN may be restricted by the proprietor of the building or responsible representatives of the organisation. These situations may for example include:

- Using the Wireless LAN equipment on board of aeroplanes, or
- In any other environment where the risk of interference to other devices or services is perceived or identified as harmful.

If you are uncertain of the policy that applies on the use of wireless devices in a specific organisation or environment (e.g. airports), you are encouraged to ask for authorisation to use the Wireless LAN device prior to turning on the equipment.

Safety Instruction for Wireless Products

If your computer has wireless function, all safety instructions must be read carefully and must be fully understood, before attempting to use our Wireless Products.

This manual contains the safety instructions that must be observed in order to avoid potential hazards that could result in personal injuries or could damage your Wireless Products.

Limitation of Liability

For damage occurring due to an earthquake or thunder, fire beyond our responsibility, action by third party, other accident, intentional or accidental mistakes by a user, misuse, use under abnormal conditions, we do not take any responsibility.

For incidental damage (loss of business profit, business interruption, etc.) occurring due to use or disability of the product, we do not take any responsibility.

For damage occurring due to non observance of the contents described in the instruction manual, we do not take any responsibility.

For damage occurring due to erroneous operation or hang up caused by use in combination with products not related to our company, we do not take any responsibility.

Usage Restrictions

Do not use the Wireless Products for controlling equipment:

- Equipment directly linked with human life corresponds to the following.
  - Medical equipment such as life support systems, equipment used in operations, etc.
  - Exhaust systems for gases such as poisonous gas etc. and exhaust systems for smoke.
  - Equipment that must be set up in compliance with various laws such as the Fire Services Act, the Construction Standard Act, etc.
  - Equipment corresponding to that mentioned above.
- Equipment linked with human safety or having a serious influence on the safe maintenance of public function, etc., because it is not designed or manufactured for this type of use.
  - Traffic control equipment for air, railroad, road, marine transport, etc.
  - Equipment used in atomic power plants etc.
  - Equipment corresponding to that mentioned above.

WARNING

Turn OFF the Wireless Communication switch of Wireless Products in a congested place, such as a crowded commuter train.

Keep this product away from a cardiac pacemaker at least 22cm.

Radio waves can potentially affect cardiac pacemaker operation, thereby causing respiratory troubles.

Turn OFF the Wireless Communication switch inside a medical facility or near medical electric equipment. Do not bring medical electric equipment close to the product.

Radio waves can potentially affect medical electric equipment, thereby causing an accident due to malfunction.

Turn OFF the Wireless Communication switch near an automatic door, fire alarm or other automatic control equipment.

Radio waves can potentially affect automatic control equipment, thereby causing an accident due to malfunction.

Do not turn ON the Wireless Communication switch in aircraft or in places that generate or can generate radio interference.

Radio waves can potentially affect them, causing an accident due to malfunction.

Monitor possible radio interference or other troubles to other equipment while the product is used. If any effect is caused, turn OFF the Wireless Communication switch.

Otherwise, radio waves can potentially affect other equipment, thereby causing an accident due to malfunction.

When using the product in a car, check with the automobile dealer if the car has an adequate electromagnetic compatibility (EMC).

Radio waves of the product can potentially hamper safe driving.

Depending on car model, the product can rarely affect car electronic equipment if it is used in a car.

NOTE

Do not use the product in the following places:

Places near a microwave oven where a magnetic field generates and places where static electricity or radio interference generates.

Depending on environment, radio waves can not reach to the product.

Regulatory Information

The Wireless LAN Mini PCI Card must be installed and used in strict accordance with the manufacturer's instructions as described in the user documentation that comes with the product. This device complies with the following radio frequency and safety standards.

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Preface

Congratulations on your purchase of a Satellite A30 series computer. This powerful notebook computer provides excellent expansion capability, including multimedia devices, and it is designed to provide years of reliable, high-performance computing.

This manual explains how to set up and begin using your Satellite A30 series computer. It also provides detailed information on configuring your computer, basic operations and care, using optional devices and troubleshooting.

If you are a new user of computers or if you're new to portable computing, first read over the Introduction and *The Grand Tour* chapters to familiarize yourself with the computer's features, components and accessory devices. Then read *Getting Started* for step-by-step instructions on setting up your computer.

If you are an experienced computer user, please continue reading the preface to learn how this manual is organized, then become acquainted with this manual by browsing through its pages. Be sure to look over the *Special features* section of the *Introduction*, to learn about features that are uncommon or unique to the computer.

Manual contents

This manual has eight chapters, three appendixes, a glossary and an index.

Chapter 1, *Introduction*, is an overview of the computer's special features, utilities, and options.

Chapter 2, *The Grand Tour*, identifies the components of the computer and briefly explains how they function.

Chapter 3, *Getting Started*, provides a quick overview of how to begin operating your computer and gives tips on safety and designing your work area. Be sure to read the sections on setting up the operating system and on restoring the preinstalled software.

Chapter 4, *Operating Basics*, includes instructions on using the following devices: Touch pad, the optical media drives, the internal modem, LAN and wireless LAN. It also provides tips on care of the computer, diskettes and DVD/CD-ROMs.

Chapter 5, *The Keyboard*, describes special keyboard functions including the keypad overlay and hotkeys.

Chapter 6, *Power and Power-Up Modes*, gives details on the computer's power resources.

Chapter 7, *Optional Devices*, describes the optional hardware available.

Chapter 8, *Troubleshooting*, provides helpful information on how to perform some diagnostic tests, and suggests courses of action if the computer doesn't seem to be working properly.

The Appendixes provide technical information about your computer.

The Glossary defines general computer terminology and includes a list of acronyms used in the text.

The Index quickly directs you to the information contained in this manual.

Conventions

This manual uses the following formats to describe, identify, and highlight terms and operating procedures.

Abbreviations

On first appearance, and whenever necessary for clarity, abbreviations are enclosed in parentheses following their definition. For example: Read Only Memory (ROM). Acronyms are also defined in the Glossary.

Icons

Icons identify ports, dials, and other parts of your computer. The indicator panel also uses icons to identify the components it is providing information on.

Keys

The keyboard keys are used in the text to describe many computer operations. A distinctive typeface identifies the key top symbols as they appear on the keyboard. For example, **Enter** identifies the Enter key.

Key operation

Some operations require you to simultaneously use two or more keys. We identify such operations by the key top symbols separated by a plus sign (**+**). For example, **Ctrl** + **C** means you must hold down **Ctrl** and at the same time press **C**. If three keys are used, hold down the first two and at the same time press the third.

Display

ABC

Names of Windows® or icons or text generated by the computer that appears on its display screen is presented in the type face you see to the left.

Text generated by the computer is usually preceded by the screen icon.

Messages

Messages are used in this manual to bring important information to your attention. Each type of message is identified as shown below.

Pay attention! *A caution informs you that improper use of equipment or failure to follow instructions may cause data loss or damage your equipment.*

Please read*. A note is a hint or advice that helps you make best use of your equipment.*

Chapter 1

Introduction

This chapter provides an equipment checklist, and it identifies the computer's special features, options and accessories.

Basic features are described in a separate pamphlet.

Some of the features described in this manual may not function properly if you use an operating system that was not preinstalled by TOSHIBA.

Equipment checklist

Carefully unpack your computer. Save the box and packing materials for future use. Check to make sure you have all the following items:

Hardware

- Satellite A30 Series Portable Personal Computer
- Universal AC adaptor and power cord
- USB FDD (optional)

Software

- The following software preinstalled on your hard disk:
  - Microsoft Windows XP
  - TOSHIBA Utilities
  - Display Driver
  - Touch pad Driver
  - Sound Driver
  - Miscellaneous Drivers (depending on the model purchased: Modem, LAN, Wireless LAN,)
  - Online Help

- Product Recovery CD-ROM or DVD-ROM

The system may not function properly if you use drivers that are not preinstalled or distributed by TOSHIBA.

Documentation

- Your computer's documentation:
  - *Satellite A30 Series Personal Computer User's Manual (this manual)*
  - *Satellite A30 Series Quickstart*
  - *Microsoft® Windows XP manual package*
  - *Safety Instruction Manual*
  - *Warranty Information*

If any of the items are missing or damaged, contact your dealer immediately.

Features

The Satellite A30 series computer uses TOSHIBA's advanced Large Scale Integration (LSI), Complementary Metal-Oxide Semiconductor (CMOS) technology extensively to provide compact size, minimum weight, low power usage, and high reliability. This computer incorporates the following features and benefits:

Processor

Processor	Some configurations are equipped with a Intel® Celeron® processor, which incorporates a 128KB level 2 cache memory. ■ 2.3 GHz Mobile Intel® Celeron® Processor or greater Some configurations are equipped with a Intel® Pentium® 4 processor , which incorporates a 512KB level 2 cache memory. ■ 2.40 GHz Intel® Pentium® 4 Processor or greater ■ 2.66 GHz Intel® Pentium® 4 Processor with HT Technology or greater Other processors may be introduced in the future.

Memory

Slots	Two 200-pin +2.5V DDR SO-DIMM connectors, supporting DDR memory cards. Maximum upgradable to 2GB by two 1GB SO-DIMM module 128KB/512KB/1MB L2 Cache on CPU
Video RAM	up to 64MB or 128MB Integrated shared solution with main memory

Power

Battery pack	12 cells Li-Ion 18650 size smart battery pack with 95Wh capacity Li-Ion Battery. Discharge time with main battery in standby mode is approximately 4 days. Discharge time with main battery in shutdown mode is approximately 1 month. 12 hours or longer charging time to 100% (system on).
RTC battery	The computer has an internal battery to back up the internal Real Time Clock (RTC) and calendar. It is good without an external power source for 1 month.
AC adaptor	The universal AC adaptor provides power to the system and recharges the batteries when they are low. It comes with a detachable power cord.

Disks

Fixed hard disk	One 30GB/40GB/60GB/80GB hard drive Bus Master IDE 9.5m/m 2.5” HDD Support Ultra 100 DMA Other hard disks may be introduced in the future.
Optical media drive	5.25” 12.7mm height DVD Multi drive, DVD-R/-RW, DVD-ROM, or CD-RW/DVD-ROM device.

Computers in this series can be configured with multiple types of optical media drive. For more information on the optical media drives available, talk to your dealer. More information on using the optical media drive can be found in Chapter 4, Operating Basics.

Options

Options	128MB/256MB/512MB/1GB SO-DIMM modules MINI PCI module (802.11a, 802.11b, 802.11a+b, 802.11g, 802.11a+g) wireless LAN module

PCMCIA Card

PCMCIA Card	One type II card socket SRAM, OTPROM, FLASH ROM and mask ROM memory card

MODEM/LAN card

MODEM/LAN card	1.8" 10.5mm removable ATA Device Card bus card ACPI 1.0b compliant

Ports

External monitor	15-pin analog VGA port supports VESA DDC2B compatible functions.
Parallel port	One 25-pin parallel port, EPP/ECP capability.
S-Video port	One TV-out connector.
Universal Serial Bus	The computer has up to three Universal Serial Bus (USB) ports (depending on model purchase) that comply with the USB 2.0 standard, enabling data transfer speeds more than 40 times faster than USB 1.1 (which this computer also supports.) The USB drives may be used to transfer data at Low, Full, and High speeds.
i.LINK (IEEE1394)	This port enables high-speed data transfer directly from external devices such as digital video cameras.
Infrared	The serial infrared port is compatible with the Infrared Data Association (IrDA 1.1) standards. It enables cableless 4 Mbps, 1.152 Mbps, 115.2 kbps, 57.6 kbps, 38.4 kbps, 19.2 kbps or 9.6 kbps data transfer with IrDA 1.1 compatible external devices.

Multimedia

Sound system	Incorporates a Wave Table Synthesizer for advanced sound applications including 3D games, DVD movie playback and Internet communications.
TV-out button	Sets your display device to TV (video-out). Press it to switch back and forth between TV and the built-in display.
Mode control button	Launches various CD, DVD and Digital audio functions. Refer to Chapter 4, *Operating Basics*, for more details.
Audio/Video controls	Let you use the computer's fixed optical media drive as a stand-alone audio CD-player or MP3 player. You can also use the buttons to control the computer's DVD video player when the system is on.
Headphone jack	Outputs analog audio.

Microphone jack	A 3.5 mm mini microphone jack enables connection of a three-conductor mini jack for monaural microphone input.
Line-in jack	A standard 3.5 mm line-in jack enables connection of a stereo device for audio input.

Communications

Modem	An internal modem provides capability for data and fax communication. It supports V.90 or V.92 depending on the region. The speed of data transfer and fax depends on analog telephone line conditions. It has a modem jack for connecting to a telephone line.
LAN	The computer has built-in support for Ethernet LAN (10 megabits per second, 10BASE-T) and Fast Ethernet LAN (100 megabits per second 100 BASE- Tx).
Wireless LAN	Some computers in this series are equipped with a wireless LAN mini-PCI card that is compatible with other LAN systems based on Direct Sequence Spread Spectrum radio technology that complies with the IEEE 802.11a, 802.11b, 802.11a+b, 802.11g, 802.11a+g Standards.. It supports data transfer up to 54 Mbits/s. It has a Frequency Channel Selection (5 GHz or 2.4 GHz) and allows roaming over multiple channels.

Dimensions

Dimensions	332.4mm x 280mm x 38.2 mm (Front)/ 45.3 mm (Rear)

Weight

Weight	7.61lb/3,45kg for 14” TFT LCD/DVD Multi drive module 7.72lb/3,5kg for 15,0” TFT LCD/DVD Multi drive module The actual weight varies depending on the configuration of the model purchased.

Security

Security	Boot-up password protection Two levels password architecture (Supervisor Password & User Password)

Special features

The following features are either unique to TOSHIBA computers or are advanced features, which make the computer more convenient to use.

Hotkeys	Key combinations let you quickly modify the system configuration directly from the keyboard without running a system configuration program.
Display Automatic Power Off	This feature automatically cuts off power to the internal display when there is no input from the keyboard or pointing device for a time specified. Power is restored when any key is pressed or when there is input from a pointing device. You can specify the time in the TOSHIBA Power Management Utility.
HDD Automatic Power Off	This feature automatically cuts off power to the hard disk drive when it is not accessed for a time specified. Power is restored when the hard disk is accessed. You can specify the time in the TOSHIBA Power Management Utility.
System Automatic Standby/Hibernation	This feature automatically brings the system to standby mode or Hibernation mode when there is no input or hardware access for a time specified. You can specify the time and select either System Standby or System Hibernate in the TOSHIBA Power Management Utility.
Keypad Overlay	A ten-key pad is integrated into the keyboard. Refer to the *Keypad overlay* section in Chapter 5, *Keyboard*, for instructions on using the keypad overlay.
Battery Save Mode	This feature lets you save battery power. You can specify the Battery Save Mode in the TOSHIBA Power Management Utility.
Instant Security	A hotkey function blanks the screen providing quick and easy data security.

Panel Power Off / On	This feature turns power to the computer off when the display panel is closed and turns it back on when the panel is opened. You can specify the setting in the TOSHIBA Power Management Utility.
Low Battery Automatic Hibernation	When battery power is exhausted to the point that computer operation cannot be continued, the system automatically enters Hibernation and shuts down. You can specify the setting in the TOSHIBA Power Management Utility.
Hibernation	This feature lets you turn off the power without exiting from your software. The contents of main memory is saved to the hard disk, when you turn on the power again, you can continue working right where you left off. Refer to the *Turning off the power* section in Chapter 3, *Getting Started*, for details.
Standby	In Standby mode, power to the system remains on, but the CPU and all other devices are in sleep mode. When the computer is in standby mode, the Power LED flashes in amber. To enter Standby mode click Start, click Shut Down, select Standby and click OK. The computer enters Standby mode regardless of the Hibernate setting.

Before entering Standby mode, be sure to save your data.

Do not install or remove a memory module while the computer is in Standby mode. The computer or the module could be damaged.

Do not remove the battery pack while the computer is in Standby mode. Data in memory will be lost.

Utilities

This section describes preinstalled utilities and tells how to start them. For details on operations, refer to each utility's online manual, help files or readme files.

TOSHIBA Power Management Utility	There are two ways to display the Windows XP Control Panel. The default is Category View. TOSHIBA Power Management Utility is under the Performance and Maintenance item.
TOSHIBA Console	TOSHIBA Console is a graphical user interface that provides easy access to help and services. It is the default function launched by the TOSHIBA Console button.

Options

You can add a number of options to make your computer even more powerful and convenient to use. The following options are available:

Memory Modules	Two memory modules can be installed in the computer.

Use only PC2100 or 2700 compatible memory modules. See your TOSHIBA dealer for details.

Battery Pack	An additional battery pack can be purchased from your TOSHIBA dealer. Use it as a spare to increase your computer operating time.
Universal AC Adaptor	If you use your computer at more than one site frequently, it may be convenient to purchase an additional AC adaptor for each site so you will not have to carry the adaptor with you.
Security Lock	A slot is available to attach a security cable to the computer to deter theft.
Wireless LAN Kit	This option enables wireless LAN functions in computers that do not have wireless preinstalled. It is installed by dealers only.
USB FDD Kit	Lets you attach a floppy diskette device to your computer by means of a USB cable.

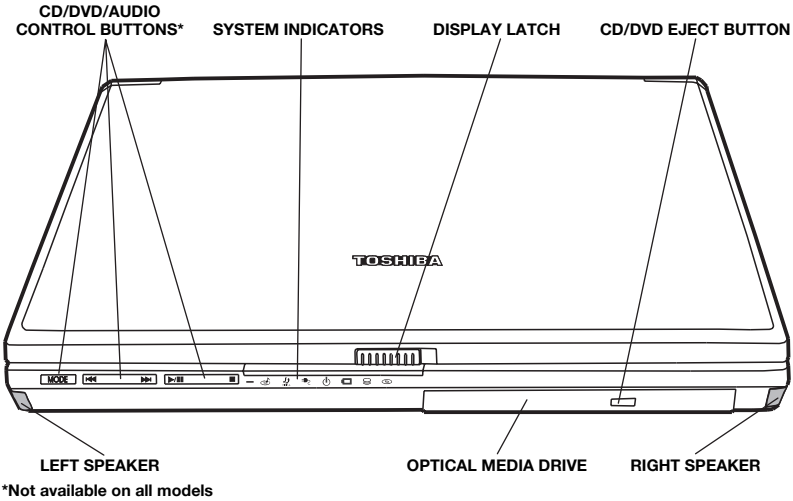
Chapter 2

The Grand Tour

This chapter identifies the various components of your computer. Become familiar with each component before you operate the computer.

Front with the display closed

The figure below shows the computer front with its display panel in the closed position.



Front of the computer with display closed

System Indicators	The system indicators provide icons for monitoring the status of Disc Player, Audio Music, DC IN, Power, Battery, Built-in HDD and Diskette/Optical Media drive. Details are given later in this chapter.
Left & Right Speakers	The left and right speakers are placed along the front edges.

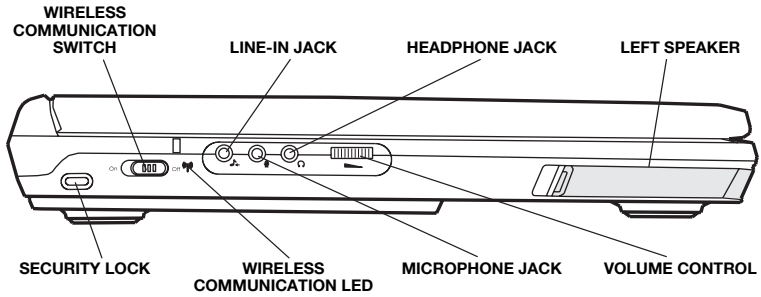
	Display Latch	This latch secures the LCD panel in its closed position. Slide the latch to open the display.
	Mode	Press this button to cycle between various CD, DVD and audio functions. Refer to Chapter 4, *Operating Basics*, for details.
►/▮▮	**Play/Pause**	Press this button to begin playing an audio CD, a DVD movie or digital audio files. This button also acts as a Pause button. Refer to Chapter 4, *Operating Basics* for details.
■	**Stop**	Stops playing the CD, DVD or digital audio. Refer to Chapter 4, *Operating Basics*, for details.
⏮	**Previous/Fast Rewind**	Skips back to previous tracks. If held down while a song is playing, it fast rewinds through it. Refer to Chapter 4, *Operating Basics*, for details.
⏭	**Next/Fast Forward**	Skips forward to previous tracks. If held down while a song is playing, it fast forwards through it. Refer to Chapter 4, *Operating Basics*, for details.

If Random or Shuffle is selected in Windows Media Player, selecting Next or Previous advances to a random selection.

	Optical Media Drive	The computer is configured with a full-size optical media drive module that lets you run either 12 cm (4.72") or 8 cm (3.15") discs without using an adaptor. See the Drives section in this chapter for technical specifications on each drive and to Chapter 4, *Operating Basics*, for information on using the drive and caring for discs.

Left side

The figure below shows the computer left side.

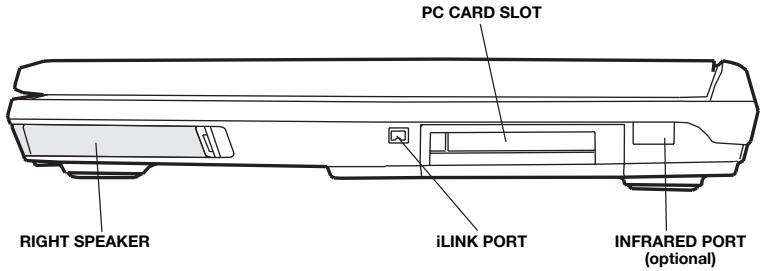


The left side of the computer

Security Lock	A security cable can attach to this slot and be used to anchor your computer to a desk or other large object to deter theft.
Headphone Jack	The **Headphone Jack** lets you connect stereo headphones or other audio-output devices such as external speakers. Connecting headphones or other devices to this jack automatically disables the internal speakers.
Microphone Jack	A standard 3.5 mm mini microphone jack enables connection of a three conductive type mini-jack for a monaural microphone.
Line-In Jack	A standard 3.5 mm min line-in jack enables connection of a stereo device for audio input.
Wireless Communication	The **Wireless Communication Switch** turns on the wireless networking transceiver. The **Wireless Communication LED** on the left side lights to indicate that wireless networking is turned on. It is not available in all configurations.
Volume Control	Use this dial to adjust the volume of the stereo speakers.
Speakers	The audio speakers. Volume can be controlled either with the volume dial on the left side of the computer, or with the Volume setting in Windows XP.

Right side

The figure below shows the computer right side.



The right side of the computer

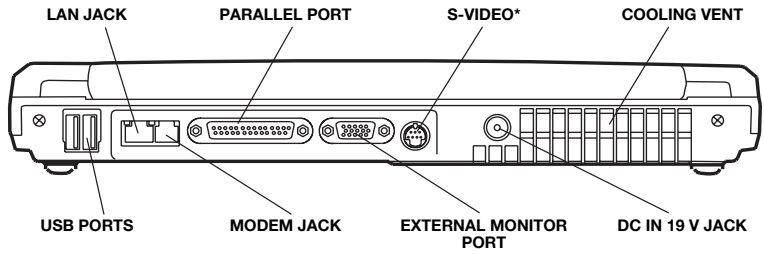
i.LINK (IEEE1394) Port	Connect an external device, such as a digital video camera to this port for high-speed data transfer. This only applies the i.Link model of the computer. Not all versions have this feature. This feature may not be present, depending on your configuration.
PC Card Slot	A PC Card slot can accommodate one 5 mm PC Card (Type II). You can install any industry standard PC Card such as a SCSI adaptor, Ethernet adaptor or flash memory card.

Keep foreign objects out of the PC Card slot. A pin or similar object can damage the computer.

Infrared port (optional)	This infrared port is compatible with Infrared Data Association (IrDA) Fast InfraRed (FIR) standards. It enables cableless 4 Mbps data transfer with IrDA 1.1 compatible external devices. Not all models will come with a Infrared port.

Back side

The figure below shows the computer back panel.



The back side of the computer

Universal Serial Bus (USB) Ports — The Universal Serial Bus (USB 2.0) ports enable chain connection of a number of USB-equipped devices. For example, you might connect a USB-HUB to the computer, then connect a keyboard to the USB-HUB and a mouse to the keyboard.

Modem Jack — In areas where an internal modem is installed as standard equipment, there is a modem jack that lets you use a modular cable to connect the modem directly to a telephone line. The modem is not supported in some marketing regions.

In case of a lightning storm, unplug the modem cable from the telephone jack.

Do not connect the modem to a digital telephone line. A digital line will damage the modem.

LAN Jack — This jack lets you connect to a LAN. The adaptor has built-in support for Ethernet LAN (10 megabits per second, 10BASE-T) and Fast Ethernet LAN (100 megabits per second, 100BASE-Tx).

Do not cover the cooling vent or otherwise obstruct it. Doing so may cause the computer to overheat and result in damage.

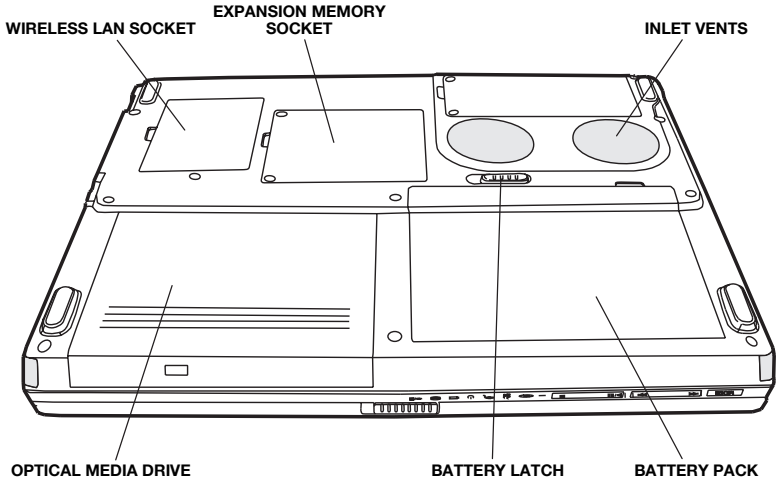
Parallel Port — This Centronics-compatible 25-pin parallel port is used to connect a parallel printer or other parallel device. This port supports Extended Capabilities Port (ECP) standard.

External Monitor Port — This 15-pin port lets you connect an external video display to the computer.

	S-Video	Plug a 4-pin S- video cable into this connector for output of NTSC or PAL signal to a VCR or TV. This feature may not be present, depending on your configuration.
DC IN 19V	**DC IN 19 V Jack**	The DC-IN socket is where you plug in the AC adapter.

Underside

The figure below shows the underside of the computer. Make sure the display is closed before turning over your computer.

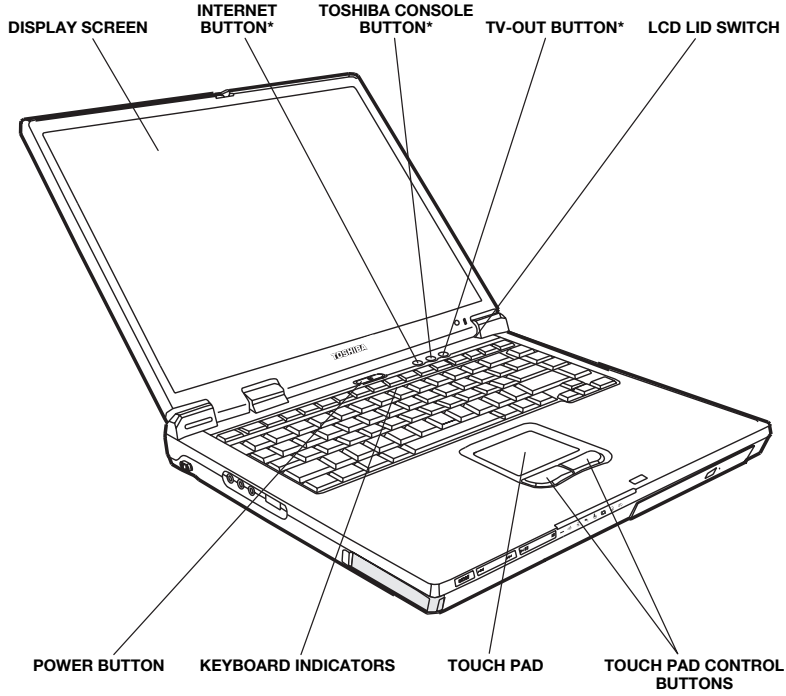


The bottom of the computer

	Wireless LAN Socket	Consult your TOSHIBA dealer for installation of a Wireless LAN card.
	Expansion Memory Socket	Use this socket to install a memory module to increase your computer's memory. Refer to the *Memory Expansion* section in Chapter 7, *Optional Devices*.
	Battery	The battery pack powers the computer when the AC adaptor is not connected. For detailed information on the battery pack, refer to Chapter 6, Power and Power- Up Modes.
	Battery Latch	Slide this latch to remove the battery pack.
	Fixed Bay	Houses the optical drive

Front with the display open

The figure below shows the front of the computer with the display open. To open the display, slide the display latch on the front of the display and lift up. Position the display at a comfortable viewing angle.



*Not available on all models

The front with the display open

Touch pad	A pointer control device located in the centre of the palm rest is used to control the on-screen pointer. Refer to the *Using the Touch pad* section in Chapter 4, *Operating Basics*.
Touch pad Control Buttons	Control buttons below the Touch pad let you select menu items or manipulate text and graphics designated by the on-screen pointer.
Power Button	Press the power button to turn the computer's power on and off.

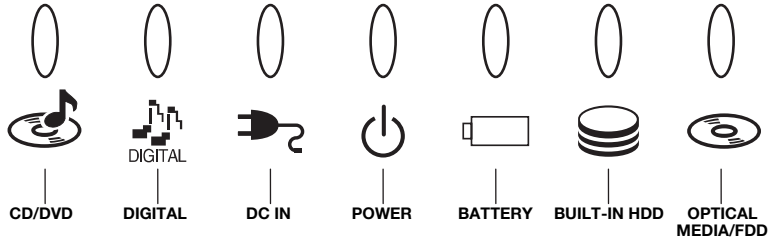
Internet Button	Press this button to launch an Internet browser. If the computer's power is off, you can press this button to turn on the computer's power and launch the browser automatically in one step. This feature may not be present, depending on your configuration.
TOSHIBA Console Button	You can associate an application to this button for automatic launch. If the computer is off, pressing this button starts the computer and launches the associated program automatically. This feature may not be present, depending on your configuration.
TV-Out Button	Switches the display over to video or television if a device has been connected through the TV-Out port with an S-video cable. While in this mode, you cannot use your computer's built-in screen. This feature may not be present, depending on your configuration.
Keyboard Indicators	The keyboard indicators provide icons to let you the caps lock, arrow mode and numeric mode functions. Details are given later in this chapter.
Display Hinges	The display hinges hold the display screen at easy-to- view angles.
Display Screen	The LCD displays high-contrast text and graphics at up to 1920 x 1440 pixels. Refer to *Appendix E*. When the computer operates on the AC adaptor the display screen's image will be somewhat brighter than when it operates on battery power. The lower brightness level is intended to save battery power.

To prolong the life of your monitor, use a screen saver when you are not working the computer and it is idle. Default screen saver time-out setting is recommended

LCD Lid Switch	This switch senses when the LCD panel is closed or opened and activates the Panel Power Off/On feature.

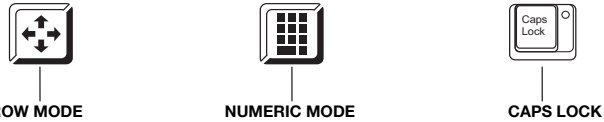
Indicators

The figures below show the system indicator lights, which light when various computer operations are in progress.



The system indicators

CD/DVD	The CD/DVD indicator glows green when the computer is in CD mode. This indicator is not present on all models.
Digital	The Digital indicator glows green when the computer is in Digital mode. This indicator is not present on all models.
DC IN	The DC IN indicator glows green when DC power is supplied from the AC power adaptor.
Power	The Power indicator glonws green when the computer is on. If you put the computer in Stand by mode it pulses amber. In Hibernation mode, it doesn't glow.
Battery	The Battery indicator indicates the condition of the battery's charge. Green indicates full charge, amber indicates battery charging and flashing amber indicates a low battery charge. Refer to Chapter 6, Power and Power- Up Modes.
Built-in HDD	This indicator glows green when the computer is accessing the hard disk.
Optical Media	This indicator glows green when the computer is accessing an optical media disc.



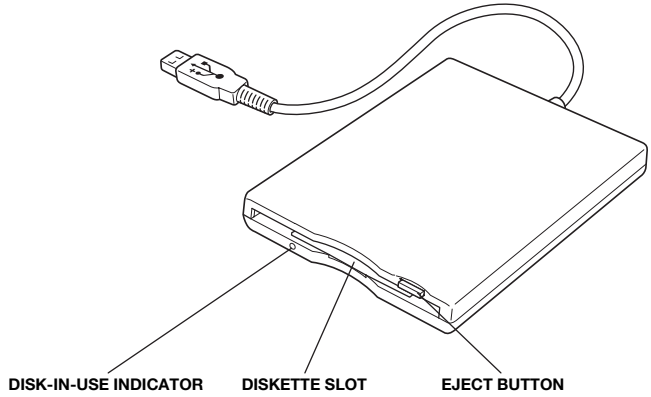
The keyboard indicators

Arrow Mode	When the Arrow mode icon lights green, you can use the keypad overlay (light grey labelled keys) as cursor keys. Refer to the *Keypad Overlay* section in Chapter 5, *The Keyboard*.
Numeric Mode	You can use the keypad overlay (light grey labelled keys) for numeric input when the Numeric mode icon lights green. Refer to the *Keypad Overlay* section in Chapter 5, *The Keyboard*.
Caps Lock	The Caps Lock LED lights when you press the Caps Lock key. When this light is on, pressing a letter key on the keyboard produces an uppercase (capital) letter.

Drives

This section describes the optical media drive and the USB FDD (optional).

3 ½" diskette drive



The diskette drive

An externally connected 3 ½" diskette drive lets you use either double density (720 KB) or high density (1.44 MB) 3 ½" diskettes for data transfer and storage.

Diskette Slot	Insert diskettes into this slot.
Eject Button	When a diskette is fully seated in the drive, the eject button pops out. To remove a diskette, push in the eject button and the diskette pops out.

Check the disc-in-use indicator when you use the diskette drive. Do not press the eject button or turn off the computer while the light glows. Doing so could destroy damage the diskette or drive.

Optical Media drive

The full-size Optical Media drive module lets you play from and record data to rewritable DVDs and CDs as well as run either 12 cm (4.72") or 8 cm (3.15") discs without using an adaptor. Use the preinstalled software, *Drag 'n Drop*, to write DVDs and CDs. Your drive may support the following formats, depending on model purchased:

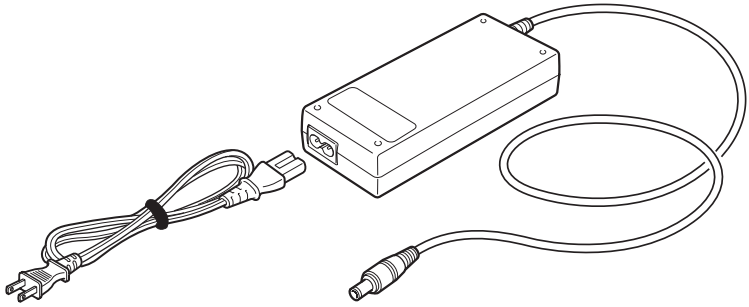
- DVD-ROM
- DVD-Video
- DVD-R
- DVD-RW
- CD-Extra (CD+)
- CD-DA
- Photo CD™
- CD-ROM XA Mode 2
- CD-R
- CD-R/W
- CD-I Ready
- CD-ROM Mode 1, Mode 2
- CD-Text

*Check the **disc-in-use** indicator when you use the Optical Media drive. Do not press the eject button, disconnect a drive or turn off the computer while the light is glowing. Doing so could damage the CD/DVD or the drive. Optical Media drives and media are manufactured according to the specifications of six marketing regions. When you purchase DVD media, make sure it matches your drive, otherwise it will not play properly.*

Code	Region
1	Canada, United States
2	Japan, Europe, South Africa, Middle East
3	Southeast Asia, East Asia
4	Australia, New Zealand, Pacific Islands, Central America, South America, Caribbean
5	Russia, Indian Subcontinent, Africa, North Korea, Mongolia
6	China

AC adaptor

The AC adaptor converts AC power to DC power and reduces the voltage supplied to the computer. It can automatically adjust to any voltage from 100 to 240 volts and to a frequency of either 50 or 60 hertz, enabling you to use the computer in almost any country/region. To recharge the battery, simply connect the AC adaptor to a power source and the computer. See Chapter 6, *Power and Power-Up Modes*, for details.



The AC adaptor

Use of the wrong adaptor could damage your computer. TOSHIBA assumes no liability for any damage in such case. Please use the bundled adaptor.

Chapter 3

Getting Started

This chapter provides basic information to get you started using your computer. It covers the following topics:

- Setting up your work space — for your health and safety Connecting the AC adaptor
- Opening the display
- Turning on the power
- Starting up for the first time
- Turning off the power
- Restarting the computer
- Restoring the preinstalled software from the Product Recovery CD-ROM or DVD-ROM

All users should be sure to carefully read the section Starting up for the first time.

Setting up your work space

Establishing a comfortable work site is important for you and your computer. A poor work environment or stressful work habits can result in discomfort or serious injury from repetitive strain to your hands, wrists or other joints. Proper ambient conditions should also be maintained for the computer's operation. This section discusses the following topics:

- General conditions
- Placement of the computer and peripheral devices
- Seating and posture
- Lighting
- Work habits

General conditions

In general, if you are comfortable, so is your computer, but read the following to make sure your work site provides a proper environment.

- Make sure there is adequate space around the computer for proper ventilation.
- Make sure the AC power cord connects to an outlet that is close to the computer and easily accessible.
- The temperature should be 5 to 30 degrees Centigrade and the relative humidity should be 10 to 90 percent.
- Avoid areas where rapid or extreme changes in temperature or humidity may occur.
- Keep the computer free of dust, moisture, and exposure to direct sunlight.
- Keep the computer away from heat sources, such as electric heaters.
- Do not use the computer near liquids or corrosive chemicals.
- Some components in the computer, including data storage media, can be damaged by magnets. Do not place the computer near magnetic objects or bring magnetic objects close to the computer. Be careful of objects, such as stereo speakers, that produce strong magnetic fields during operation. Also, be careful with metal objects, such as bracelets, which can be inadvertently magnetized.
- Do not operate the computer in close proximity to a mobile phone.
- Leave ample ventilation room for the fan. Ensure that there are no obstructions around any of the system inlets or exhaust vents.

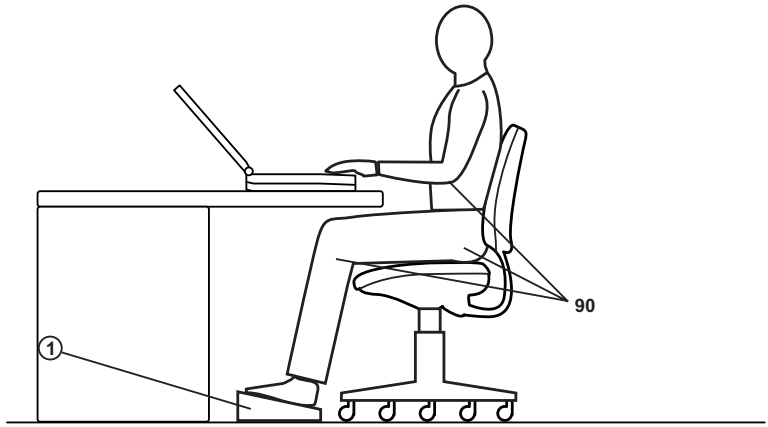
Placement of computer

Position the computer and peripheral devices to provide comfort and safety.

- Set the computer on a flat surface at a comfortable height and distance. The display should be no higher than eye level to avoid eye strain.
- Place the computer so that it is directly in front of you when you work and make sure you have adequate space to easily operate other devices.
- Allow adequate space behind the computer to let you freely adjust the display.
- The display should be angled to reduce glare and maximize visibility. If you use a paper holder, set it at about the same height and distance as the computer.

Seating and posture

The height of your chair in relation to the computer and keyboard as well as the support it gives your body are primary factors in reducing work strain. Refer to the following tips and to figure 3-1.



Posture and positioning of the computer

- Place your chair so that the keyboard is at or slightly below the level of your elbow. You should be able to type comfortably with your shoulders relaxed.
- Your knees should be slightly higher than your hips. If necessary, use a foot rest to raise the level of your knees to ease pressure on the back of your thighs.
- Adjust the back of your chair so it supports the lower curve of your spine.
- Sit straight so that your knees, hips and elbows form approximately 90 degree angles when you work. Do not slump forward or lean back too far.

Lighting

Proper lighting can improve legibility of the display and reduce eye strain.

- Position the computer so that sunlight or bright indoor lighting does not reflect off the screen. Use tinted windows, shades or other screen to eliminate sun glare.
- Avoid placing the computer in front of bright light that could shine directly in your eyes.
- If possible, use soft, indirect lighting in your computer work area. Use a lamp to illuminate your documents or desk, but be sure to position the lamp so that it does not reflect off the display or shine in your eyes.

Work habits

A key to avoiding discomfort or injury from repetitive strain is to vary your activities. If possible, schedule a variety of tasks into your work day. If you must spend long periods at the computer, finding ways to break up the routine can reduce stress and improve your efficiency.

- Sit in a relaxed posture. Good positioning of your chair and equipment as described earlier can reduce tension in your shoulders or neck and ease back strain.
- Vary your posture frequently.
- Occasionally stand up and stretch or exercise briefly.
- Exercise and stretch your wrists and hands a number of times during the day.
- Frequently, look away from the computer and focus your eyes on a distant object for several seconds, for example 30 seconds every 15 minutes.
- Take frequent short breaks instead of one or two long breaks, for example, two or three minutes every half hour.
- Have your eyes examined regularly and visit a doctor promptly, if you suspect you might be suffering from a repetitive strain injury.
- Please check every couple of months to ensure the fan inlets or exhaust vents (see sections 2-5 and 2-7) are unobstructed. Clean them if necessary.

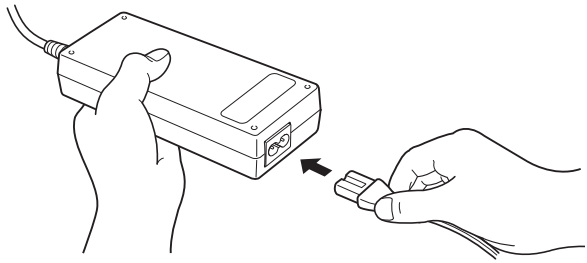
A number of books are available on ergonomics and repetitive strain injury or repetitive stress syndrome. For more information on these topics or for pointers on exercises for such stress points as hands and wrists, please check with your library or book vendor. Also refer to the computer's *Safety Instruction Manual*.

Connecting the AC adaptor

Attach the AC adaptor when you need to charge the battery or you want to operate from AC power. It is also the fastest way to get started, because the battery pack will need to be charged before you can operate from battery power. The AC adaptor can be connected to any power source supplying from 100 to 240 volts and 50 or 60 hertz. For details on using the AC adaptor to charge the battery pack, refer to Chapter 6, *Power and Power-Up Modes*.

Use of the wrong adaptor could damage your computer. TOSHIBA assumes no liability for any damage in such case. Please use the bundled adaptor.

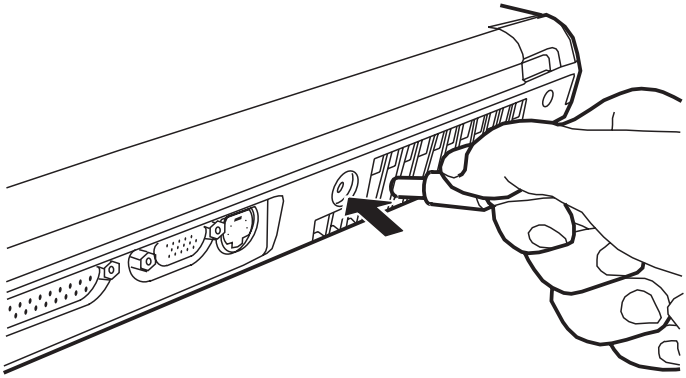
1. Connect the power cord to the AC adaptor.



Connecting the power cord to the AC adaptor

Handling the AC adaptor cord on this product will expose you to lead, a chemical known to the State of California to cause birth defects or other reproductive harm. Wash your hands after handling.

2. Connect the AC adaptor to the DC output plug to the **DC IN** input port on the back of the computer.



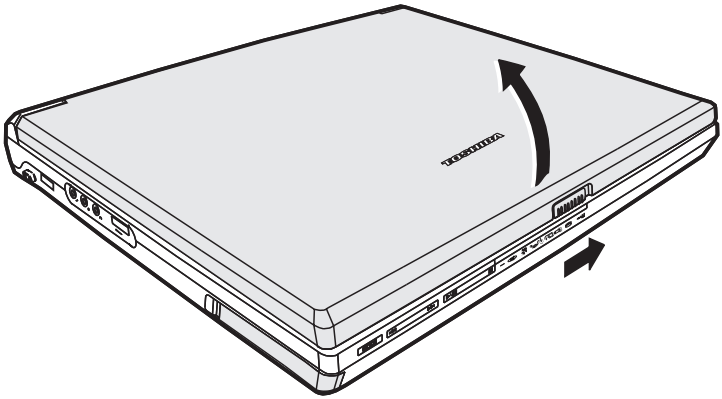
Connecting the adaptor to the computer

3. Plug the power cord into alive wall outlet. The **Battery** and **DC IN** indicators on the front of the computer should glow.

Opening the display

The display panel can be rotated in a wide range of angles for optimal viewing.

1. Slide the display latch on the front of the computer to the right to unlatch the display panel.



Opening the display

2. Lift the panel up and adjust it to the best viewing angle for you.

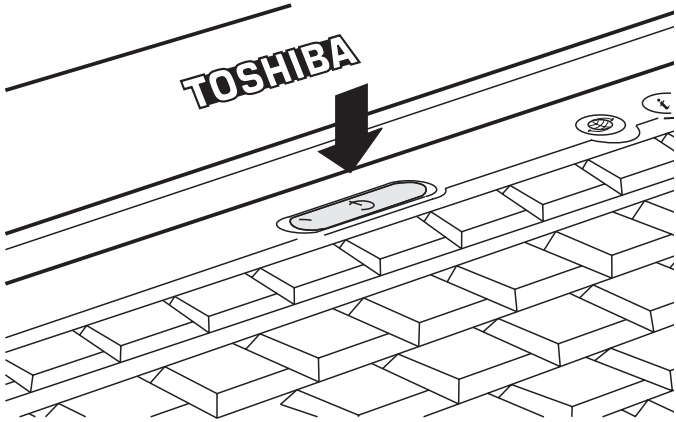
Use reasonable care when opening and closing the display panel. Opening it vigorously or slamming it shut could damage the computer.

Turning on the power

This section describes how to turn on the power.

After you turn on the power for the first time, do not turn it off until you have set up the operating system. Refer to the section Starting up for the first time in this chapter.

1. Open the display panel.
2. Press and hold the computer's power button for two or three seconds and release.



Turning on the power

Starting up for the first time

When you first turn on the power, the computer's initial screen is the Microsoft Windows XP Startup Screen Logo. Follow the on-screen directions for each screen. During setup, you can click the **Back** button to return to the previous screen. Be sure to read the **Windows End User License Agreement** display carefully.

Turning off the power

The power can be turned off in one of the following modes: Shut down (Boot), Hibernation or Standby mode.

Shut Down mode (Boot mode)

When you turn off the power in Shut Down mode no data is saved and the computer will boot to the operating system's main screen.

1. If you have entered data, save it to the hard disk or to a diskette.
2. Make sure all disk activity has stopped, then remove the CD/DVD-ROM or diskette.

*Make sure the **Built-in HDD** and **optical media drive** are off. If you turn off the power while a disk is being accessed, you can lose data or damage the disk.*

3. Click **start** and click **Turn Off Computer**. From the **Turn Off Computer** window click **Turn Off**.
4. Turn off the power to any peripheral devices.

Do not turn the computer or devices back on immediately. Wait a moment to let all capacitors fully discharge.

Hibernation mode

The hibernation feature saves the contents of memory to the hard disk when the computer is turned off. The next time the computer is turned on, the previous state is restored. The hibernation feature does not save the status of peripheral devices.

*While entering hibernation mode, the computer saves the contents of memory to the HDD. Data will be lost if you remove the battery or disconnect the AC adaptor before the save is completed. Wait for the **Built-in HDD** indicator to go out.*

Do not install or remove a memory module while the computer is in hibernation mode. Data will be lost.

Benefits of Hibernation

The hibernation feature provides the following benefits:

- Saves data to the hard disk when the computer automatically shuts down because of a low battery.

For the computer to shut down in hibernation mode, the hibernation feature must be enabled in two places in TOSHIBA Power Management utility: the Power Save Modes tab and the Advanced tab. Otherwise, the computer will shut down in Standby mode. If battery power becomes depleted, data saved in Standby will be lost.

- You can return to your previous working environment immediately when you turn on the computer.
- Saves power by shutting down the system when the computer receives no input or hardware access for the duration set by the System hibernate feature.
- You can use the panel power off feature.

Starting Hibernation

*You can also enable Hibernation by pressing **Fn + F4**. See Chapter 5, Keyboard, for details.*

To enter Hibernation mode, follow the steps below.

1. Click **Start**.
2. Select **Turn Off Computer**.
3. Open the **Turn Off Computer** dialog box. **Hibernate** is not displayed.
4. Press the **Shift** key. The **Standby** item will change to **Hibernate**.
5. Select **Hibernate**.

Automatic Hibernation

The computer will enter Hibernate mode automatically when you press the power button or close the lid. First, however, make the appropriate settings according to the steps below.

1. Open the **Control Panel**.
2. Open **Performance and Maintenance** and open **TOSHIBA Power Management**.
3. Select the **Advanced** tab.
4. Select **Enable hibernate support**.
5. Enable the desired Hibernation settings for **When I press the power button** and **When I close the lid of my portable computer**.
6. Click the **OK** button.

Data save in hibernation mode

When you turn off the power in hibernation mode, the computer takes a moment to save current memory data to the hard disk. During this time, the **Built-in HDD** indicator will light. After you turn off the computer and memory is saved to the hard disk, turn off the power to any peripheral devices.

Do not turn the computer or devices back on immediately. Wait a moment to let all capacitors fully discharge.

Standby mode

In standby mode the power remains on, but the CPU and all other devices are in sleep mode.

If the computer is not used or accessed in any way, including receipt of e-mail, for 15 minutes when the AC adaptor is connected, the computer will automatically enter Standby mode (TOSHIBA Power Management Utility default). To restore operation, press the power button.

If a network application is active when the computer automatically enters Standby, it might not be restored when the computer wakes up from standby. To prevent the computer from automatically entering standby mode, disable Standby in the TOSHIBA Power Management Utility. Open the TOSHIBA Power Management Utility and click the Power Save Modes tab. Next select either an AC Power or Battery Power option and then click details. When the details page comes up, you can disable the Standby setting be moving the slider to Never. That action, however, will nullify the computer's Energy Star compliance.

Standby precautions

- Before entering Standby mode, be sure to save your data.
- Do not remove/install memory or remove power components:
  - Do not remove/install the memory module. The computer or the module could be damaged.
  - Do not remove the Battery Pack.

  In any of the above cases, the standby configuration will not be saved.
- If you carry the computer on board an aircraft or into a hospital, be sure to shut down the computer in hibernation mode or in shutdown mode to avoid radio signal interference.

Benefits of standby

The standby feature provides the following benefits:

- Restores the previous working environment more rapidly than does hibernation.
- Saves power by shutting down the system when the computer receives no input or hardware access for the duration set by the System Standby feature.
- You can use the panel power off feature.

Executing standby

*You can also enable Standby by pressing **Fn + F3**. See Chapter 5, Keyboard, for details.*

You can enter standby mode in one of three ways:

1. Click **start**, click **Turn Off Computer** and click **Stand by**.
2. Close the display panel. This feature must be enabled. To enable it, select the **TOSHIBA Power Management Utility** icon in the Control Panel and select the **Advanced** tab and then set your **Power Buttons** options to **Standby**.
3. Press the power button. This feature must be enabled. To enable it, select the **TOSHIBA Power Management Utility** icon in the Control Panel and select the **Advanced** tab.

When you turn the power back on, you can continue where you left when you shut down the computer.

When the computer is shut down in standby mode, the power indicator flashes amber.

If you are operating the computer on battery power, you can lengthen the operating time by shutting down in hibernation mode. Standby mode consumes more power.

Standby limitations

Standby will not function under the following conditions:

- Power is turned back on immediately after shutting down.
- Memory circuits are exposed to static electricity or electrical noise.

Restarting the computer

Certain conditions require that you reset the system. For example, if:

- You change certain computer settings.
- An error occurs and the computer does not respond to your keyboard commands.

There are three ways to reset the computer system:

1. Select **Restart** from the **Turn Off Computer** window in the **start** box.
2. If the computer is already on, press **Ctrl + Alt + Del**.
3. Press the power button and hold it down for five seconds. Wait 10 to 15 seconds, then turn the power on again by pressing the power button.

Restoring the preinstalled software from the Product Recovery CD-ROM or DVD-ROM

If preinstalled files are damaged, use the Product Recovery CD-ROM or DVD-ROM to restore them. To restore the operating system and all preinstalled software, follow the steps below.

When you reinstall the Windows operating system, the hard disk will be reformatted and all data will be lost.

1. Load the Product Recovery CD-ROM or DVD-ROMin the drive and turn off the computer's power.
2. Power on your computer, when **In Touch with Tomorrow TOSHIBA** appears, press **F12** key. Boot Menu will appear.
3. Use the up or down cursor key to select the CD-ROM/DVD drive in the display menu.
4. Follow the on-screen instructions.

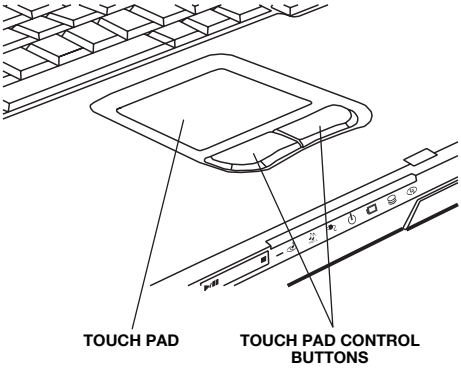
Chapter 4

Operating Basics

This chapter gives information on basic operations including using the Touch pad, optical media drives, the internal modem, LAN, wireless LAN. It also provides tips on caring for your computer and on heat dispersal.

Using the Touch pad

To use the Touch pad, simply move your finger tip across it in the direction you want the on-screen pointer to go.



Touch pad and control buttons

Two buttons below the keyboard are used like the buttons on a mouse pointer. Press the left button to select a menu item or to manipulate text or graphics designated by the pointer. Press the right button to display a menu or other function depending on the software you are using.

Do not press on the Touch pad too hard or press a sharp object such as a ball point pen against the Touch pad. The Touch pad could be damaged.

The Touch pad has similar functions to a two-button mouse with a scroll wheel. For some functions, you can tap the Touch pad instead of pressing a control button.

*You can customize pointing device actions in **Mouse Properties**. Open the **Control Panel**, select the **Mouse** icon and press **Enter** to open the **Mouse Properties** window.*

Click	Click the left control button or tap the Touch pad one time.
Double-click	Click the left control button twice or tap the Touch pad twice.
Drag and drop	**1.** Select the material you want to move. **2.** Leave your finger on the Touch pad and move the material. **3.** Lift your finger to drop the material where you want it.
Scroll	Vertical: Move your finger up or down the right edge of the Touch pad. Horizontal: Move your finger left or right along the bottom edge of the Touch pad.

Using optical media drives

The computer can be configured with one of the following optical media drives: DVD-ROM, CD-RW/DVD, DVD-R/-RW or DVD-Multi drive. The text and illustrations in this section refer primarily to the DVD-ROM drive. However, operation is the same for the other drives. The full-size drive provides high-performance execution of DVD-ROM or CD-ROM-based programs. You can run either 12 cm (4.72") or 8 cm (3.15") discs without an adaptor. An ATAPI interface controller is used for drive operation. When the computer is accessing a disc, an LED on the drive glows. Refer to Chapter 2, *The Grand Tour*, for specifications on each type of drive.

Safety Precautions

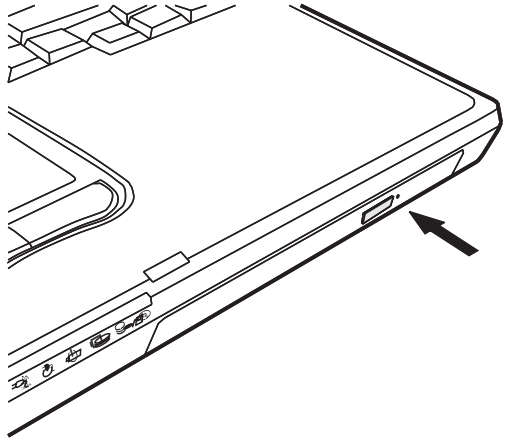
When operating your DVD device, please keep the following in mind:

1. Turn off the computer before mounting or removing the device in order to avoid the risk of damaging it.
2. Insert the DC power plug in the correct direction in order to avoid the risk of damaging the device.
3. Handle this device only in electrostatically safe environments and do not touch connecting terminals with empty hands when mounting or removing this device.
4. Do NOT do any of the following:
   - Do not use storage media (DVD or CD) that are not the correct size or shape or do not meet the minimum formatting requirements.
   - Do not insert more than one (1) CD or DVD disc into the drive at any time. Doing so will damage or destroy this equipment and could damage or destroy the disc or cause data loss or corruption.
   - Do not load or eject any CD or DVD disc with force. Doing so will damage or destroy this device and damage or destroy the disc or cause data loss or destruction.
   - Do not give a strong shock while load or eject operation is in process. Doing so will damage or destroy the device and could damage or destroy the disc or cause data loss or corruption.
   - Do not eject a CD or DVD disc while the disc is in operation. Doing so will damage or destroy this equipment and could damage or destroy the disc or cause data loss or corruption.
   - Do not insert anything else into the drive other than a CD or DVD disc. Doing so will damage or destroy this equipment.

Loading compact discs

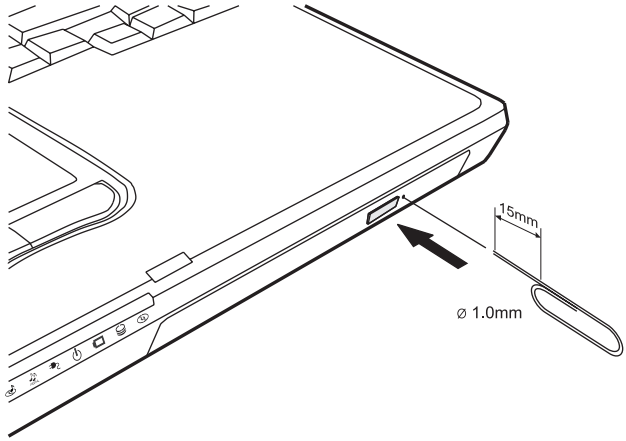
To load a DVD/CD, follow the steps below and refer to the figures below.

1. Turn on the power.
2. a. Press the eject button to open the drawer slightly.



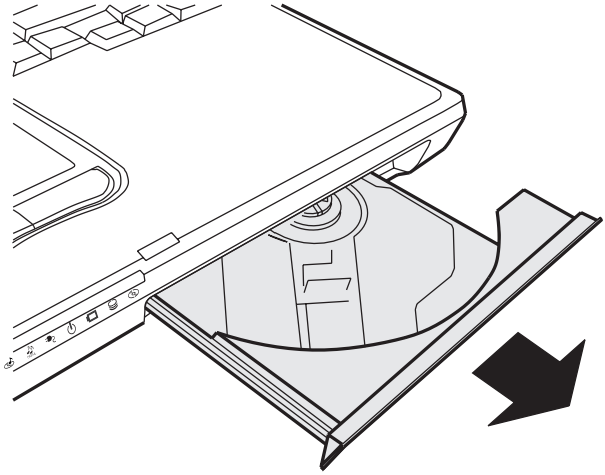
Pressing the eject button

b. Pressing the eject button will not open the drawer when the computer's power is off. If the power is off, you can open the drawer by inserting a slender object (about 15 mm) such as a straightened paper clip into the eject hole just to the right of the eject button.



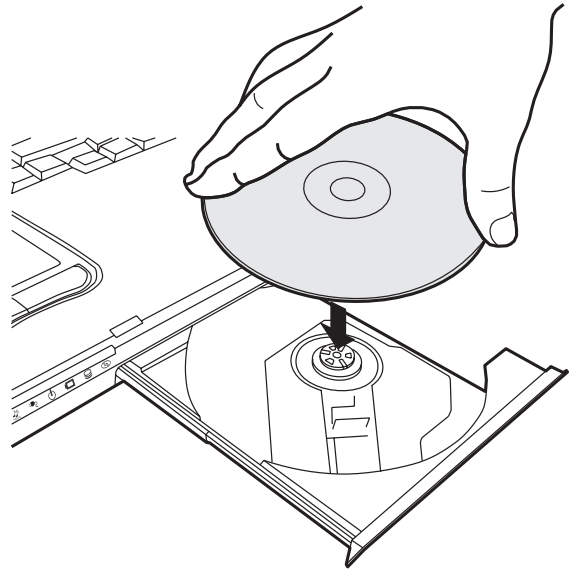
Manual release with the eject hole

3. Grasp the drawer gently and pull until it is fully opened.



Pulling the drawer open

4. Lay the DVD/CD, label side up, in the drawer.

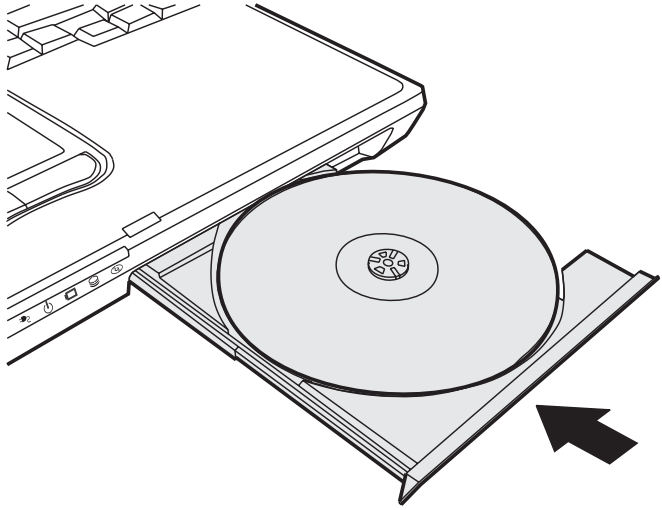


Inserting a DVD/CD

Be careful not to touch the lens or the area around it. Doing so could cause the drive to malfunction.

5. Press gently at the centre of the DVD/CD until you feel it click into place. The DVD/CD should lie below the top of the spindle, flush with its base.
6. Push the centre of the drawer to close it. Press gently until it locks in place.

If the DVD/CD is not seated properly when the drawer is closed, it might be damaged. Also, the drawer might not open fully when you press the eject button.



Closing the DVD-ROM drawer

Removing compact discs

To remove the DVD/CD, follow the steps below and refer to figure 4-8.

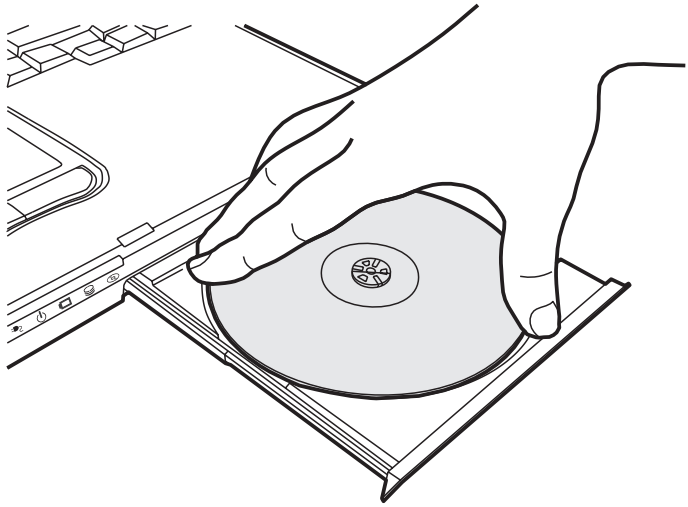
*Do not press the eject button while the computer is accessing the DVD drive. Wait for the **Optical Media** indicator to go out before you open the drawer. Also, if the disc is spinning when you open it, wait for it to stop before you remove it.*

1. To pop the drawer partially open, press the eject button. Gently pull the drawer out until it is fully opened.

When the drawer pops open slightly, wait a moment to make sure the DVD/CD has stopped spinning before pulling the drawer fully open.

Turn off the power before you use the eject hole. If the DVD/CD is spinning when you open the drawer, it could fly off the spindle and cause injury.

2. The DVD/CD extends slightly over the sides of the drawer so you can grasp it. Hold the it gently and lift it out.



Removing a DVD/CD

3. Push the centre of the drawer to close it. Press gently until it locks into place.

CD/Digital Mode button

This section describes how to use the CD/DVD/Audio Control Buttons to control the optical media drive and Digital Audio Data.

Whether your computer is turned on or off, the CD/DVD/Audio control buttons are locked by default. To unlock them, press the CD/Digital mode button for more than 3 seconds. Press the CD/Digital mode button again for over 3 seconds to lock them again. When the CD/Digital mode is unlocked, press the CD/Digital mode briefly to switch between CD and Digital mode. The system status indicator LEDs will show you which mode you are in.

	CD/DVD Mode and Play button	Digital Mode and press Play button
OS is running	Windows Media Player starts and CD audio play begins. The CD icon is displayed in the Windows Task Bar.	Windows Media Player starts and Digital Audio Data play begins. The Digital Audio icon is displayed on Windows desktop screen.

To play Digital Audio Data, you must set the play list in the Windows Media Player. The next time you play Digital Audio Data in succession, the former play list will become active. If a CD was played the previous time, then All Audio will be used.

Do not install or remove a memory module while the DVDROM drive power is on. First turn off the power to the DVD-ROM drive.

CD/DVD/Audio control buttons

Besides the power button, the following four buttons control functions of the optical media drive and Digital Audio Data:

1. **Play/Pause** Starts or pauses play.
2. **Stop** Stops play.
3. **Next** Advances to the next track, chapter or data
4. **Previous** Returns to the previous track, chapter or data

If Random or Shuffle is selected in Windows Media Player, selecting Next or Previous advances to a random selection.

Writing DVD/CDs

The full-size drive provides high-performance execution of DVD/CD-based programs. You can run either 12 cm (4.72") or 8 cm (3.15") DVD/CDs without an adaptor. For information on loading and unloading disks refer to the *Using optical media drive* section.

DVD/CD-R disks can be written to only once.
DVD-RAM/DVD-RW/CD-RW disks can be rewritten many times.

Before writing

Please observe the following points when you write or rewrite data.

- We recommend the following manufacturers of CD-R, CD-RW, DVD-R, DVDRW and DVD-RAM media. Media quality can affect write success rates.

CD-R:	Taiyo Yuden Co. Ltd.
	Mitsui Chemicals Inc.
	Mitsubishi Chemical Corporation
	Ricoh Co., Ltd
	Hitachi Maxell Ltd.
CD-RW:	Mitsubishi Chemical Corporation.
	Ricoh Co., Ltd.
DVD-R:	Matsushita Electric Corporation Co., Ltd.
	Taiyo Yuden Co. Ltd.
DVD-RW	Victor Company of Japan, Ltd. (JVC).
	TDK Corporation.
DVD-RAM	Matsushita Electric Corporation Co., Ltd.

- Be sure to connect the AC adaptor when you write or rewrite.
- Be sure to close all other software programs except the writing software.
- Do not run software such as a screen saver, which can put a heavy load on the CPU.
- Operate the computer at full power. Do not use power-saving features.
- Do not write while virus check software is running. Wait for it to finish, then disable virus detection programs including any software that checks files automatically in the background.
- Do not use hard disk utilities, including those intended to enhance HDD access speed. They may cause unstable operation and damage data.

- Write from the computer's HDD to the DVD/CD. Do not try to write from shared devices such as a LAN server or any other network device.
- Writing with software other than *Drag'n Drop CD* has not been confirmed. Therefore, operation with other software cannot be guaranteed.

When writing or rewriting

Note when you write or rewrite a CD-R, CD-RW, DVD-R, DVD-RW, or DVD-RAM:

- Always copy data from the HDD to the DVD/CD. Do not use cut-and-paste. The original data will be lost if there is a write error.
- Before you use the **Erase** function, make sure the DVD/CD-RW disk does not contain any data you want to keep. **Erase** destroys all data on the disk.
- Do not perform any of the following actions:
  - Operate the computer for any other function, including use of a mouse or Touch pad, closing/opening the LCD panel.
  - Start a communication application such as a modem.
  - Apply impact or vibration to the PC.
  - Install, remove or connect external devices, including the following:

    PC card, SD card, SmartMedia, USB devices, external display, i.LINK devices, optical digital devices.
  - Use the Mode control button and Audio/Video control button to reproduce music and voice.
  - Open the DVD drive.
- If the media is poor in quality, dirty or damaged, writing or rewriting errors may occur.
- Set the computer on a level surface and avoid places subject to vibration such as airplanes, trains or cars. Do not use an unstable surface such as a stand.
- Keep mobile phones and other wireless communication devices away from the computer.

Disk care

This section provides tips on protecting data stored on your DVD/CDs and diskettes.

DVD/CD care

Handle your DVD/CDs with care. The following simple precautions will increase the lifetime of your DVD/CDs and protect the data stored on them:

1. Store your DVD/CDs in the container they came in to protect them and keep them clean.
2. Do not bend the DVD/CD.
3. Do not write on, apply a sticker to, or otherwise mar the surface of the DVD/CD that contains data.
4. Hold the DVD/CD by its outside edge or the edge on the centre hole. Fingerprints on the surface may prevent the drive from properly reading data.
5. Do not expose to direct sunlight, extreme heat or cold. Do not place heavy objects on your DVD/CDs.
6. If your DVD/CDs become dusty or dirty, wipe them with a clean dry cloth. Wipe from the centre out, do not wipe in a circular direction around the DVD/ CDs. If necessary, use a cloth dampened in water or a neutral cleaner. Do not use benzene, thinner or similar cleaner.

Diskette care

Handle your diskettes with care. The following simple precautions will increase the lifetime of your diskettes and protect the data you store on them:

1. Store your diskettes in the container they came in to protect them and keep them clean. If a diskette is dirty, do not use cleaning fluid. Clean it with a soft damp cloth.
2. Do not slide back the diskette's protective metal covering or touch the diskette's magnetic surface. Fingerprints may prevent the diskette drive from reading data from the diskette.
3. Data may be lost if the diskette is twisted; bent; or exposed to direct sunlight, extreme heat or cold.
4. Do not place heavy objects on your diskettes.
5. Do not eat, smoke, or use erasers near your diskettes. Foreign particles inside the diskette's jacket can damage the magnetic surface.
6. Magnetic energy can destroy the data on your diskettes. Keep your diskettes away from speakers, radios, television sets and other sources of magnetic fields.

Using the internal modem

This section describes how to make settings and connect the modem. Refer to the computer's online help files for more information. Refer also to the online help files for your modem software.

The internal modem does not support the voice functions described in the help files. All data and fax functions are supported.

In case of a lightning storm, unplug the modem cable from the telephone jack.

Do not connect the modem to a digital telephone line. A digital line will damage the modem.

IMPORTANT SAFETY INSTRUCTIONS

When using you telephone equipment, basic safety precautions should always be followed to reduce the risk of fire, electric shock and injury to persons, including the following:

1. Do not use this product near water, for example, near a bathtub, wash bowl, kitchen sink or laundry tub, in a wet basement or near a swimming pool.
2. Avoid using a telephone (other than a cordless type) during an electrical storm. There may be a remote risk of electric shock from lightning.
3. Do not use the telephone to report a gas leak in the vicinity of the leak.
4. Use only the power cord indicated in this manual.

Region selection

Telecommunication regulations vary from one country/region to another, so you will need to make sure the internal modem's settings are correct for the country/ region in which it will be used.

1. Point to **All Programs**, point to **TOSHIBA Internal Modem** and click **Region Select Utility**.

Do not use the Country/Region Select function in the Modem setup utility in the Control Panel if the function is available. If you change the Country/Region in the Control Panel, the change may not take effect.

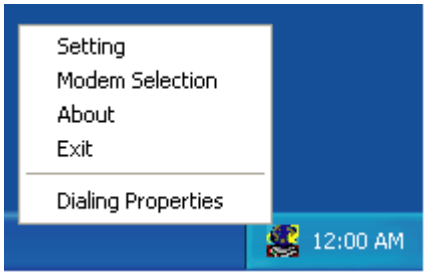
2. The Region Selection icon will appear in the Windows Task Bar.

The Region Selection icon

3. Click the icon with the primary mouse button to display a list of regions that the modem supports. A sub menu for telephony location information will also be displayed. A check will appear next to the currently selected region and telephony location.
4. Select a region from the region menu or a telephony location from the submenu.
   - When you click a region it becomes the modem's region selection, and the New Location for telephony will be set automatically.
   - When you select a telephony location, the corresponding region is automatically selected and it becomes the modem's current region setting.

Properties menu

Click the icon with the secondary mouse button to display the following menu.



The properties menu

Setting

You can enable or disable the following settings:

AutoRun Mode

Region Select Utility starts automatically when you start up the operating system.

Open the Dialling Properties dialog box after selecting region.

The dialling properties dialog box will be displayed automatically after you select the region.

Location list for region selection.

A submenu appears displaying location information for telephony.

Open dialog box, if the modem and Telephony Current Location region code do not match.

A warning dialog box is displayed if current settings for region code and telephony location are incorrect.

Modem Selection

If the computer cannot recognize the internal modem, a dialog box is displayed. Select the COM port for your modem to use.

Dialling Properties

Select this item to display the dialling properties.

If you are using the computer in Japan, technical regulations described in the Telecommunications Business Law require that you select Japan region mode. It is illegal to use the modem in Japan with any other selection.

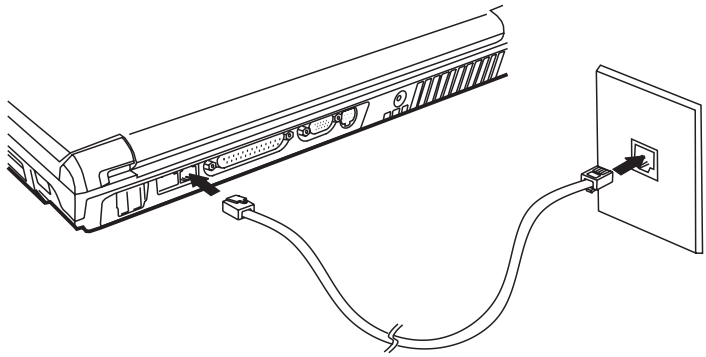
Connecting

To connect the internal modem cable, follow the steps below.

In case of a lightning storm, unplug the modem cable from the telephone jack.

Do not connect the modem to a digital telephone line. A digital line will damage the modem.

1. Plug one end of the modular cable into the modem jack.
2. Plug the other end of the modular cable into a telephone jack.



Connecting the internal modem

Do not pull on the cable or move the computer while the cable is connected.

If you use a storage device such as a DVD-ROM drive or HDD connected to a 16-bit PC card, modem speed might be slow or communication might be interrupted.

Disconnecting

To disconnect the internal modem cable, follow the steps below.

1. Pinch the lever on the connector in the telephone jack and pull out the connector.
2. Disconnect the cable from the computer in the same manner.

LAN

The computer is equipped with LAN circuits that support Ethernet LAN (10 megabits per second, 10BASE-T) and Fast Ethernet LAN (100 megabits per second, 100BASE-Tx). This section describes how to connect/disconnect to a LAN.

Do not install or remove an optional memory module while Wake-up on LAN is enabled.

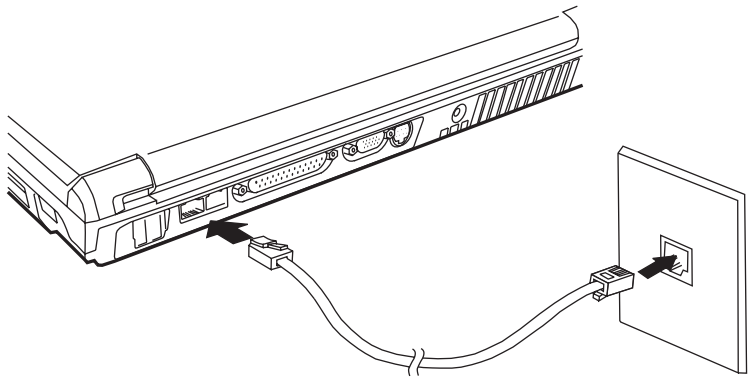
Wake-up on LAN does not work without the AC adaptor. Leave it connected, if you are using this feature.

Connecting LAN cable

The computer must be configured properly before connecting to a LAN. Logging onto a LAN using the computer's default settings could cause a malfunction in LAN operation. Check with your LAN administrator regarding set-up procedures.

If you are using Fast Ethernet LAN (100 megabits per second, 100BASE-TX), be sure to connect with a CAT5 cable. You cannot use a CAT3 cable. If you are using Ethernet LAN (10 megabits per second, 10BASE-T), you can connect with either a CAT5 or a CAT3. To connect the LAN cable, follow the steps below.

1. Turn off the power to the computer and to all external devices connected to the computer.
2. Plug one end of the cable into the LAN jack. Press gently until you hear the latch click into place.



Connecting the LAN cable

3. Plug the other end of the cable into a LAN hub connector. Check with your LAN administrator before connecting to a hub.

Disconnecting LAN cable

To disconnect the LAN cable, follow the steps below.

1. Pinch the lever on the connector in the computer's LAN jack and pull out the connector.
2. Disconnect the cable from the LAN hub in the same manner. Check with your LAN administrator before disconnecting from the hub.

Wireless communications

The computer's wireless communication function supports both wireless LAN devices.

Wireless LAN

The wireless LAN is compatible with other LAN systems based on Direct Sequence Spread Spectrum radio technology that complies with IEEE 802.11 wireless LAN standard (802.11a, 802.11b, 802.11a+b, 802.11g, 802.11a+g). It supports the following features:

This is a Certification Mark of the Wireless Ethernet Compatibility Alliance, Inc.

- Automatic Transmit Rate Select mechanism in the transmit range of 54, 11, 5.5, 2 and 1 Mbit/s. (54Mbit/s is available only on 802.11a or 802.11g)
- Frequency Channel Selection (2.4 GHz)
- Roaming over multiple channels
- Card Power Management
- Wired Equivalent Privacy (WEP) data encryption. Wake-up on LAN does not function on a wireless LAN.

Wireless communication switch

You can enable or disable wireless LAN function, with the on/off switch. No transmissions are sent or received when the switch is off. Slide the switch toward the left to turn it on and toward the right to turn it off.

Set the switch to off in airplanes and hospitals. Check the LED. It will stop glowing when the wireless communication function is off.

Wireless communication LED

The LED indicates the status of the wireless communication functions.

LED status	Indication
LED off	Wireless communication switch is set to off.
LED glows	Wireless communication switch is on.

If you used the Task Bar to disable W-LAN, restart the computer or follow the procedures below to enable the system to recognize W-LAN. Open or click the following: **start**, **Control Panel**, **System**, **Hardware Device Manager**, **Network adapters**, **TOSHIBA Wireless LAN Mini PCI Card** and **enable**.

TV-Out

Use this jack to connect to a television. Be sure to use a 4 pin type S-video cable.

Cleaning the computer

To help ensure long, trouble-free operation, keep the computer free of dust and use care with liquids around the computer.

- Be careful not to spill liquids into the computer. If the computer does get wet, turn the power off immediately and let the computer dry completely before you turn it on again.
- Clean the computer using a slightly damp (with water) cloth. You can use glass cleaner on the display. Spray a small amount of cleaner on a soft, clean cloth and wipe the screen gently with the cloth.

Never spray cleaner directly onto the computer or let liquid run into any part of it. Never use harsh or caustic chemical products to clean the computer.

Moving the computer

The computer is designed for rugged durability. However, a few simple precautions taken when moving the computer will help ensure trouble-free operation.

- Make sure all disk activity has ended before moving the computer. Check the **Built-in HDD** and **Optical Media drive** indicators on the computer.
- If a diskette is in the diskette drive, remove it.
- If a disc is in the optical media drive, remove it. Also make sure the optical media drive drawer is securely closed.
- Turn off the power to the computer.
- Disconnect all peripherals before moving the computer.
- Close the display. Do not pick up the computer by its display panel or back (where the interface ports are located).
- Close all port covers.
- Disconnect the AC adaptor if it is connected.
- Use the carrying case when transporting the computer.

Chapter 5

The Keyboard

The computer's keyboard layouts are compatible with a 101/102-key enhanced keyboard. By pressing some keys in combination, all the 101/102-key keyboard functions can be executed on the computer.

The number of keys on your keyboard depends on which country/region's keyboard layout your computer is configured with. Keyboards for numerous languages are available.

There are five types of keys: typewriter keys, keypad overlay, function keys, soft keys and cursor control keys. The typewriter keys and keypad overlay keys are grey. The other keys are dark grey.

Typewriter keys

The typewriter keys, produce the upper- and lower-case letters, numbers, punctuation marks, and special symbols that appear on the screen. There are some differences, however, between using a typewriter and using a computer keyboard:

- Letters and numbers produced in computer text vary in width. Spaces, which are created by a space character may also vary depending on line justification and other factors.
- The lowercase l (el) and the number 1 (one) are not interchangeable on computers as they are on a typewriter.
- The uppercase O (oh) and the 0 (zero) are not interchangeable.
- The **Caps Lock** function key locks only the alphabetic characters in uppercase while the shift lock on a typewriter places all keys in the shifted position.
- The **Shift** keys, the **Tab** key, and the **BkSp** (backspace) key perform the same function as their typewriter counterparts but also have special computer functions.

F1 ... F12 function keys

The function keys, not to be confused with **Fn**, are the 12 keys at the top of your keyboard. These keys are dark grey, but function differently from the other dark grey keys.

F1 through **F12** are called function keys because they execute programmed functions when pressed. Used in combination with the Fn key, keys marked with icons execute specific functions on the computer. See the section, *Soft keys: Fn key combinations*, in this chapter. The function executed by individual keys depends on the software you are using.

Soft Keys: Alt Gr Key Combinations

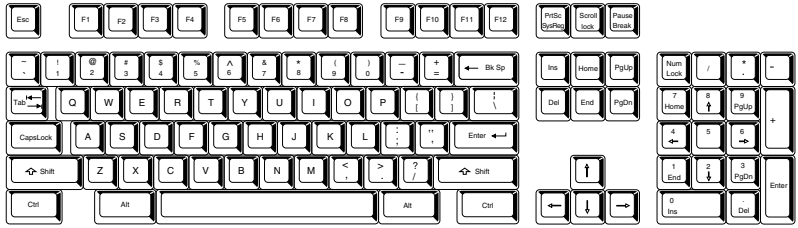
The **Alt Gr** key, at the right of the space bar, is used in combination with other keys to create accented or special characters (#,@,|, etc.). Note that some of the keys at the top of the keyboard bear three symbols (not to be confused with the blue or white letters on the side of some other keys). To generate the third symbol, hold **Alt Gr** and press the key bearing the character you wish to create. Please note that since the **Alt Gr** key is not present on the American keyboard, it cannot be used if you have installed an American keyboard driver.

Soft keys: Fn key combinations

The **Fn** (function) is unique to TOSHIBA computers and is used in combination with other keys to form soft keys. Soft keys are key combinations that enable, disable or configure specific features.

Some software may disable or interfere with soft-key operations. Soft-key settings are not restored by the Standby feature.

Emulation keys



A 101-key enhanced keyboard layout

The keyboard is designed to provide all the features of the 101-key enhanced keyboard, shown above. The 101/102-key enhanced keyboard has a numeric keypad and scroll lock key. It also has additional **Enter** and **Ctrl** keys to the right of the main keyboard. Since the keyboard is smaller and has fewer keys, some of the enhanced keyboard functions must be simulated using two keys instead of one on the larger keyboard.

Your software may require you to use keys that the keyboard does not have. Pressing the **Fn** key and one of the following keys simulates the enhanced keyboard's functions.

Press **Fn + F10** or **Fn + F11** to access the integrated keypad. When activated, the grey keys with white numbers become numeric keypad keys (**Fn + F11**) or cursor control keys (**Fn + F10**). Refer to the Keypad overlay section in this chapter for more information on how to operate these keys. The power on default for both settings is off.

Press **Fn + F12** (**ScrLock**) to lock the cursor on a specific line. The power on default is off.

Press **Fn + Enter** to simulate **Enter** on the enhanced keyboard's numeric keypad.

Press **Fn + Ctrl** to simulate the enhanced keyboard's right **Ctrl** key.

Hotkeys

Hotkeys (**Fn** + a function or cursor key) let you enable or disable certain features of the computers.

Sound mute: Pressing **Fn + Esc** turns sound on or off. When you press these hotkeys, the current setting will be displayed in a window.

Instant security: Press **Fn + F1** to blank the screen to prevent others from accessing your data. To restore the screen and original settings, press any key or use the Touch pad. If you have set a screen saver password, a dialog will appear. Enter the password and click **OK**. If no screen saver password is set, the screen will be restored when you press any key or use the Touch pad.

Power save mode: Pressing **Fn + F2** changes the power save mode. Press **Fn + F2** once to display the Power Save Mode in a window. Press the hotkeys again to change the setting. You can also change this setting through the *AC Power or Battery Power* items of the *Power Save Modes* tab in the **TOSHIBA Power Management Utility**.

Standby: When you press **Fn + F3**, the computer can enter Standby. To avoid entering Standby unexpectedly, a dialog box appears for verification. However, if you check the checkbox in the dialog box, it will not appear from the next time.

Hibernation: When you press **Fn + F4**, the computer can enter Hibernation. To avoid entering Hibernation unexpectedly, a dialog box appears for verification. However, if you check the checkbox in the dialog box, it will not appear from the next time.

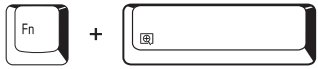
Display selection: Press **Fn + F5** to change the active display device. When you press these hot keys a dialog box appears. Only selectable devices will be displayed. Hold down **Fn** and press **F5** again to change the device. When you release **Fn** and **F5**, the selected device will change. If you hold down the keys for three seconds the selection will return to **LCD**.

Display brightness: Pressing **Fn + F6** decreases the display brightness. When you press these hotkeys, the current setting will be displayed for two seconds by a pop-up icon. You can also change this setting through the *Monitor brightness* item of the *Power Save Mode* window in Power Saver.

Display brightness: Pressing **Fn + F7** increases the display brightness. When you press these hotkeys, the current setting will be displayed for two seconds by a pop-up icon. You can also change this setting through the *Monitor brightness* item of the *Power Save Mode* window in Power Saver.

Wireless LAN: Pressing **Fn + F8** turns the Wireless LAN off and on. In order for this to properly work, the Wireless LAN Kill Switch in the computer's left side must be switched on as well.

Touch pad: Pressing **Fn + F9** enables or disables the Touch pad function. When you press these hotkeys, the current setting will change and be displayed as an icon.



Resolution: Pressing **Fn + Spacebar** allows you to cycle through available monitor resolutions.

Windows special keys

The keyboard provides two keys that have special functions in Windows XP. One activates the **Start** menu and the other has the same function as the secondary mouse button.

This key activates the Windows XP **Start** menu.

This key has the same function as the secondary mouse button.

Keypad overlay

Your computer's keyboard does not have an independent numeric keypad, but its numeric keypad overlay functions like one. The keys in the centre of the keyboard with white letters make up the numeric keypad overlay. The overlay provides the same functions as the numeric keypad on the 101/102-key enhanced keyboard in figure 5-2.

Turning on the overlays

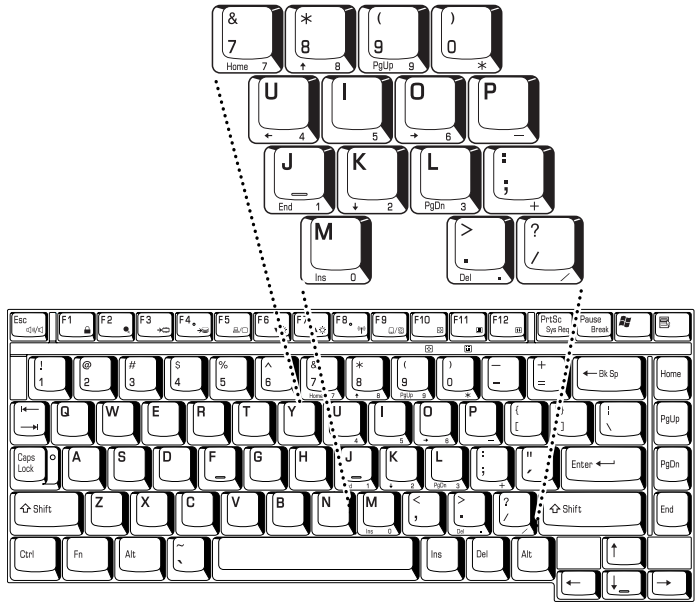
The numeric keypad overlay can be used for numeric data input or cursor and page control.

Arrow mode

To turn on the Arrow mode, press **Fn + F10** (**Arrow mode** indicator lights). Now try cursor and page control using the keys shown in the figure below. Press **Fn + F10** again to turn off the overlay.

Numeric mode

To turn on the Numeric mode, press **Fn + F11** (**Numeric mode** indicator lights). Now try numeric data entry using the keys in the figure below. Press **Fn + F11** again to turn off the overlay.



The numeric keypad overlay

Temporarily using normal keyboard (overlay on)

While using the overlay, you can temporarily access the normal keyboard without turning off the overlay:

1. Hold down **Fn** and press any other key. All keys will operate as if the overlay were off.
2. Type upper-case characters by holding down **Fn + Shift** and pressing a character key.
3. Release **Fn** to continue using the overlay.

Temporarily using overlay (overlay off)

While using the normal keyboard, you can temporarily use the keypad overlay without turning it on:

1. Press and hold down **Fn**.
2. Check the keyboard indicators. Pressing **Fn** turns on the most recently used overlay. If the **Numeric mode** indicator lights, you can use the overlay for numeric entry. If the **Arrow mode** indicator lights, you can use it for cursor and page control.
3. Release **Fn** to return to normal keyboard operation.

Temporarily changing modes

If the computer is in **Numeric mode**, you can switch temporarily to **Arrow mode** by pressing a shift key.

If the computer is in **Arrow mode**, you can switch temporarily to **Numeric mode** by pressing a shift key.

Generating ASCII characters

Not all ASCII characters can be generated using normal keyboard operation. But, you can generate these characters using their ASCII codes.

With the overlay on:

1. Hold down **Alt**.
2. Using the overlay keys, type the ASCII code.
3. Release **Alt**, and the ASCII character appears on the display screen.

With the overlay off:

1. Hold **Alt + Fn**.
2. Using the overlay keys, type the ASCII code.
3. Release **Alt + Fn**, and the ASCII character appears on the display screen.

Chapter 6

Power and Power-Up Modes

The computer's power resources include the AC adaptor and internal batteries. This chapter gives details on making the most effective use of these resources including charging and changing batteries, tips for saving battery power, and power up modes.

Power conditions

The computer's operating capability and battery charge status are affected by the power conditions: whether an AC adaptor is connected, whether a battery is installed and what the charge level is for the battery.

		Power on	Power off (no operation)
AC adaptor connected	Battery fully charged	■ Operates ■ No charge ■ LED: **Battery** green **DC IN** green	■ LED: **Battery** green **DC IN** green
	Battery partially charged or no charge	■ Operates ■ Quick charge ■ LED: **Battery** amber **DC IN** green	■ Quick charge ■ LED: **Battery** amber **DC IN** green
	No battery installed	■ Operates ■ No charge ■ LED: **Battery** off **DC IN** green	■ No charge ■ LED: **Battery** off **DC IN** green

		Power on	Power off (no operation)
AC adaptor not connected	Battery charge is above low battery trigger point	■ Operates ■ LED: **Battery** off **DC IN** off	—
	Battery charge is below low battery trigger point	■ Operates ■ Alarm sounds (depending on the Toshiba Power Management Utility setting) ■ LED: **Battery** flashes amber **DC IN** off	—
	Battery charge exhausted	Computer goes into resume mode and shuts down	—
	No Battery installed	■ Cannot operate ■ LED: **Battery** off **DC IN** off	—

Power indicators

As shown in the above table, the **Battery**, **DC IN** and **Power** indicators on the system indicator alert you to the computer's operating capability and battery charge status.

Battery indicator

Check the **Battery** indicator to determine the status of the battery. The following indicator lights indicate the battery status:

Flashing amber	The battery charge is low. The AC adaptor must be connected to recharge the battery.
Amber	Indicates the AC adaptor is connected and charging the battery.
Green	Indicates the AC adaptor is connected and the battery is fully charged.
No light	Under any other conditions, the indicator does not light.

DC IN indicator

Check the **DC IN** indicator to determine the power status with the AC adaptor connected:

Green	Indicates the AC adaptor is connected and supplying proper power to the computer.
No light	Indicates the AC adaptor is not connected.

Power indicator

Check the **Power** indicator to determine the power status with the AC adaptor connected:

Green	Indicates power is being supplied to the computer and the computer is turned on.
Blinking amber	Indicates power is being supplied to the computer while the computer is in Standby mode. The indicator blinks on for one second and off for two seconds.
No light	Under any other conditions, the indicator does not light.

Battery types

The computer has two types of batteries:

- Battery pack
- Real Time Clock (RTC) battery

Battery pack

When the AC adaptor is not connected, the computer's main power source is a removable lithium ion battery pack, also referred to in this manual as the battery.

You can purchase additional battery packs for extended use of the computer away from an AC power source.

The battery is a disposable item. When its operation becomes short even when fully charged, replace it with a new one.

The battery pack is a lithium ion battery, which can explode if not properly replaced, used, handled or disposed of. Dispose of the battery as required by local ordinances or regulations. Use only batteries recommended by TOSHIBA as replacements.

Do not remove the Battery Pack while the computer is in Standby mode. Data is stored in RAM, so if the computer loses power, it will be lost.

Battery type " PA3250U-1BAS" or " PA3250U-1BRS " is for use with TOSHIBA Notebook PC, model "Satellite A30".

Real Time Clock battery

The Real Time Clock (RTC) battery provides power for the internal real time clock and calendar. It also maintains the system configuration.

If the RTC battery becomes completely discharged, the system loses this data and the real time clock and calendar stop working. The following message appears when you turn on the power:

```
ERROR: 0271=Check date and time settings.
WARNING: 0251=System CMOS checksum bad - Default
configuration used.
Press <F1> to resume, <F2> to Setup
```

The computer's RTC battery is a lithium ion battery and should be replaced only by your dealer or by a TOSHIBA service representative. The battery can explode if not properly replaced, used, handled or disposed of. Dispose of the battery as required by local ordinances or regulations.

When this error appears, the following action is recommended.

1. Plug in AC over 24 hours
2. Press F2 to enter BIOS setup menu
3. Set correct time and date

If you still see error message after above action, please get contact with TOSHIBA service.

Care and use of the battery pack

The battery pack is a vital component of portable computing. Taking proper care of it will help ensure longer operating time on battery power as well as a longer life for your battery pack. Follow the instructions in this section carefully to ensure safe operation and maximum performance.

Safety precautions

Mishandling of batteries can cause death, serious injury or property damage.

Carefully observe the following advisories:

Danger: Indicates an imminently hazardous situation, which could result in death or serious injury, if you do not follow instructions.

Warning: Indicates a potentially hazardous situation, which could result in death or serious injury, if you do not follow instructions.

Caution: Indicates a potentially hazardous situation, which if not avoided, may result in moderate or minor injury or property damage.

Note: Provides important information.

Risk of explosion if battery is replaced by an incorrect type dispose of used batteries according to the instruction.

Danger

1. Never try to dispose of the battery pack by burning or expose it to a heating device such as a microwave oven. The battery pack could explode and cause bodily injury.
2. Never try to disassemble, repair or otherwise tamper with a battery pack. The battery pack will overheat and ignite. Leakage of caustic alkaline solution or other electrolytic substances will cause fire or injury, possibly resulting in death or serious injury.
3. Never short-circuit the battery pack by contacting the terminals with a metal object. A short-circuit can cause fire or otherwise damage the battery pack and possibly cause injury. To avoid accidental short-circuit, always wrap the battery pack in plastic and cover the terminals with electrical tape when storing or disposing of the battery pack.
4. Never puncture the battery pack with a nail or other sharp object. Never strike it with a hammer or other object. Never step on it.
5. Never try to charge the battery pack in any manner other than that described in the user's manual. Never connect the battery pack to a plug socket or to an automobile's cigarette lighter socket. It may rupture or ignite.
6. Use only the battery pack supplied with the computer or other device or an battery pack approved by the computer or device's manufacturer. Battery packs have different voltages and terminal polarities. Use of an improper battery could cause smoke, fire or rupture of the battery pack.
7. Never subject a battery pack to heat, such as storage near a heat source. Exposure to heat can cause the battery pack to ignite, explode or leak caustic liquid and cause death or serious injury. It could also fail or malfunction causing data loss.
8. Never expose the battery pack to abnormal shock, vibration or pressure. The battery pack's internal protective device will fail, causing it to overheat, explode, ignite or leak caustic liquids possibly resulting in death or serious injury.
9. Never let a battery pack become wet. A wet battery pack will overheat, ignite or rupture possibly resulting in death or serious injury.

Warning

1. Never allow caustic electrolyte fluid leaked from a battery pack to contact your eyes, skin or clothing. If caustic electrolyte fluid should contact your eyes, immediately wash your eyes with large amounts of running water and seek medical attention, to help prevent eye damage. It electrolyte fluid should contact your skin, immediately wash it under running water to prevent rash. If it contacts your clothes, promptly remove them to prevent the fluid from contacting your skin or eyes.
2. Immediately turn off the power, disconnect the AC adaptor and remove the battery if any of the following events are observed in the battery pack: offensive or unusual odour, excessive heat, discoloration or deformation. Never use the computer again until it has been checked by a TOSHIBA service provider. It might generate smoke or fire, or the battery pack might rupture.
3. Make sure the battery is securely installed in the computer before attempting to charge the battery pack. Improper installation could generate smoke or fire, or cause the battery pack to rupture.
4. Keep the battery pack out or reach of infants and children. It can cause injury.

Caution

1. Never continue to use a battery pack after its recharging capacity has become impaired, or after the display of a warning message indicating that the battery pack's power is exhausted. Continued use of an exhausted or impaired battery pack could cause the loss of data.
2. Never dispose of battery packs with normal trash. Bring them to your TOSHIBA dealer or to another recycling centre to save resources and prevent environ- mental damage. Cover the terminals with electrical tape to prevent short-circuits, which could cause the battery pack to ignite or rupture.
3. Use only battery packs recommended by TOSHIBA as replacements.
4. Always make sure the battery pack is installed correctly and securely. Otherwise, a battery pack could fall out and possibly cause injury.
5. Charge the battery pack only in normal ambient temperature between 5 and 30 degrees Celsius. Otherwise, the electrolyte solution might leak, battery pack performance might deteriorate and the battery life might be shortened.
6. Be sure to monitor the remaining battery power. If the battery pack and real time clock battery discharge completely, Standby and Suspend will not function and data in memory will be lost. Also, the computer might register an incorrect time and date. In this case, connect the AC adaptor to recharge the batteries.
7. Never install or remove the battery pack without first turning off the power and disconnecting the AC adaptor. Never remove the battery pack while the computer is in Suspend or Standby mode. Data will be lost.

Note

1. Never remove the battery pack while the Wake-up on LAN function is enabled. Data will be lost. Before you remove a battery pack, disable the Wake-up on LAN function.
2. To ensure the battery pack maintains maximum capacity, operate the computer on battery power once a week until the battery pack is fully discharged. Refer to the section *Extending battery life* in this chapter for procedures. If the computer is continuously operated on AC power for an extended period, more than a week, the battery might fail to retain a charge. It might not function efficiently over the expected life of the battery pack and the **Battery** indicator might not indicate a low-battery condition.
3. After the battery pack is charged, avoid leaving the AC adaptor connected and the computer turned off for more than a few hours at a time. Continuing to charge a fully charged battery pack can damage the battery.

Charging the batteries

When the power in the battery pack becomes low, the **Battery** indicator flashes amber indicating that only a few minutes of battery power remain. If you continue to use the computer while the **Battery** indicator flashes, the computer enables Hibernation mode (so you don't lose data) and automatically turns off.

You must recharge a battery pack when it becomes discharged.

Procedures

To recharge a battery pack while it is installed in the computer, connect the AC adaptor to the **DC IN** socket and plug the other end into a working outlet.

The **Battery** indicator glows amber when the battery is being charged.

Use only the computer connected to an AC power source to charge the battery pack. Do not attempt to charge the battery pack with any other charger.

Time

The following table shows the time required to fully charge a discharged battery.

	Charging time (hours)	
Battery type	**Power on**	**Power off**
Battery pack	About 12 or longer	about 4
RTC battery	about 24	about 24 with AC or Battery pack

The charging time when the computer is on is affected by ambient temperature, the temperature of the computer and how you use the computer. If you make heavy use of external devices, for example, the battery might scarcely charge at all during operation. Refer also to the section Maximizing battery operating time. The same factors affect charge time.

Battery charging notice

The battery may not charge right away under the following conditions:

- The battery is extremely hot or cold. To make sure the battery charges to its full capacity, charge the battery at room temperature of 10° to 30°C (50° to 88°F).
- The battery is nearly completely discharged. Leave the AC adaptor connected for a few minutes and the battery should begin charging.

Once a battery pack is fully charged, it is recommended that you operate the computer only on battery power until the battery pack completely discharges. Doing so extends battery life and helps ensure accurate monitoring of battery capacity.

The **Battery** indicator may show a rapid decrease in battery operating time when you try to charge a battery under the following conditions:

- The battery has not been used for a long time.
- The battery has completely discharged and been left in the computer for a long time.
- A cool battery is installed in a warm computer.

In such case, follow the steps below.

1. Fully discharge the battery by leaving it in the computer with the power on until the power automatically shuts off.
2. Plug in the AC adaptor.
3. Charge the battery until the **Battery** indicator glows green.

Repeat these steps two or three times until the battery recovers normal capacity.

Leaving the AC adaptor connected will shorten battery life. At least once a month, run the computer on battery power until the battery is fully discharged, then recharge the battery.

Monitoring battery capacity

Remaining battery power can be monitored by the **TOSHIBA Power Management Utility**. Refer to *Utilities* in Chapter 1, *Introduction*.

Wait for a moment after turning on the computer before trying to monitor the remaining operating time. The computer needs this time to check the battery's remaining capacity.

With repeated discharges and recharges, the battery's capacity will gradually decrease. Therefore, an often used, older battery will not operate for as long as a new battery even when both are fully charged.

Maximizing battery operating time

A battery's usefulness depends on how long it can supply power on a single charge.

How long the charge lasts in a battery depends on:

- How you configure the computer (for example, whether you enable battery power saving options). The computer provides a battery save mode to conserve battery power. This mode has the following options:
  - Display auto off
  - HDD auto off
  - System auto off
  - LCD brightness
- How often and how long you use the hard disk, CD-ROM and the diskette drive.
- How much charge the battery contained to begin with.
- How you use optional devices, such as a PC Card, to which the battery supplies power.
- Enabling Resume mode conserves battery power if you are frequently turning the computer off and on.
- Where you store your programs and data.

- Closing the display when you are not using the keyboard saves power.
- Operating time decreases at low temperatures.
- The condition of the battery terminals. Make sure the battery terminals stay clean by wiping them with a clean dry cloth before installing the battery pack.

Retaining data with power off (standby mode)

When you turn off your computer with fully charged batteries, the batteries retain data for the following approximate time periods:

Battery	4 days minimum (Standby mode) 1 month minimum (Shut down mode)
RTC battery	1 month minimum

Extending battery life

To maximize the life of your battery pack:

- If you have extra battery packs, rotate their use.
- If you will not be using the system for an extended period, remove the battery pack.
- Store spare battery packs in a cool dry place out of direct sunlight.

Replacing the battery pack

When the battery pack reaches the end of its operating life you will need to install a new one. If the **Battery** indicator flashes amber shortly after the battery has been fully recharged, the battery pack needs to be replaced.

You might also replace a discharged battery pack with a charged spare when you are operating your computer away from an AC power source. This section explains how to remove and install the battery pack.

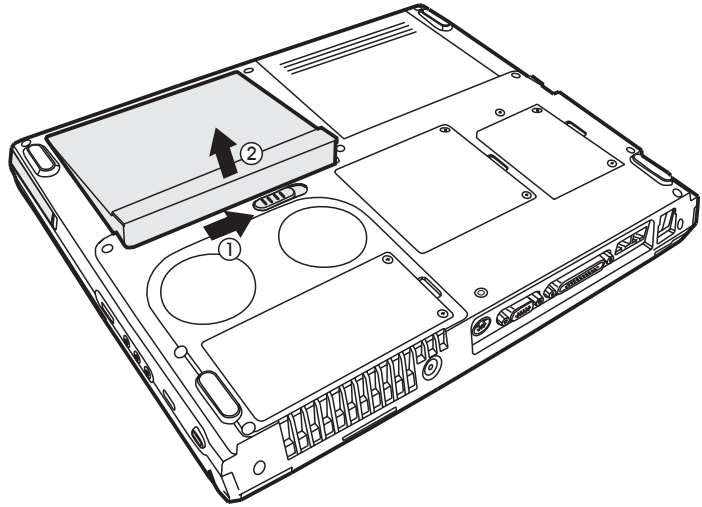
Removing the battery pack

To replace a discharged battery pack, follow the steps below.

When handling battery packs, be careful not to short circuit the terminals. Also do not drop, hit or otherwise apply impact; do not scratch or break the casing and do not twist or bend the battery pack.

Do not remove the battery pack while the computer is in Standby mode. Data in memory will be lost.

1. Save your work.
2. Turn the computer's power off. Make sure the **Power** indicator is off.
3. Remove all cables connected to the computer.
4. Turn the computer upside down.
5. Slide the battery latch to the right, then pull the battery out of the battery bay.



Removing the battery pack

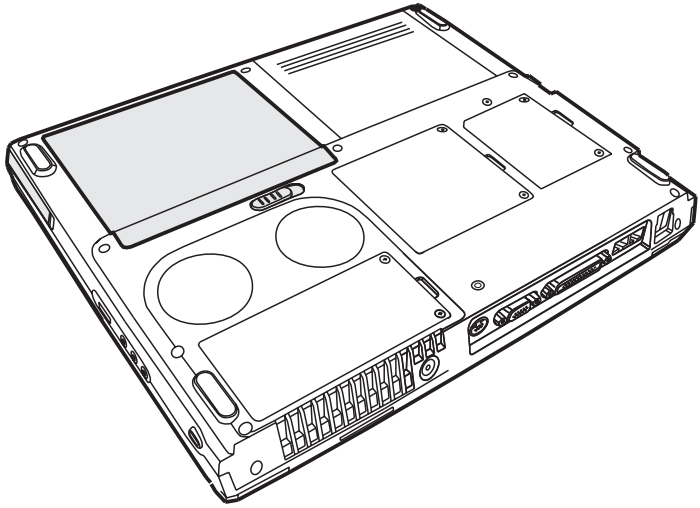
For environmental reasons, do not throw away a spent battery pack. Please return spent battery packs to your TOSHIBA dealer.

Installing the battery pack

To install a battery pack, follow the steps below.

The battery pack is a lithium ion battery, which can explode if not properly replaced, used, handled or disposed of. Dispose of the battery as required by local ordinances or regulations. Use only batteries recommended by TOSHIBA as replacements.

1. Turn the computer's power off.
2. Disconnect all cables connected to the computer.
3. Hold the battery pack so that the label faces down and the connectors on the battery face the connectors on the computer.
4. Gently press the battery into the battery bay until the latch clicks into place.



Installing the battery pack

Power-up modes

The computer has three power-up modes:

- Hibernation (saves data in memory to the hard disk)
- Standby (Power remains on, saving data in RAM, but the CPU and all other devices enter sleep mode.)
- Boot (does not save data in memory)

Refer also to the section Turning off the power in Chapter 3, Getting Started.

Panel power off/on

You can set up your computer so that power turns off automatically when you close the display panel.

When you open the panel, power turns on in Standby or Hibernation mode but not in boot mode.

If the panel power off function is enabled and you use Shut down Windows, do not close the display until the shut down function is completed.

System automatic Standby/ Hibernation

This feature automatically turns off the system in Standby or Hibernation mode if the computer is not used for a set duration.

Refer to *Special Features*, in Chapter 1, *Introduction* for an explanation of how to set the duration.

Chapter 7

Optional Devices

Optional devices can expand the computer's capabilities and its versatility. This chapter describes connection or installation of the following types of devices:

Cards/memory

- PC cards
- Memory modules

Power devices

- Additional battery pack
- Additional AC adaptor

Peripheral devices

- Parallel printer
- External monitor
- Television
- i.LINK (IEEE1394)
- Security lock

PC cards

The computer is equipped with a PC card expansion slot that can accommodate one 5 mm Type II card. Any PC card that meets industry standards (manufactured by TOSHIBA or other vendor) can be installed. The slots support 16-bit PC cards, including PC card 16's multifunction card and CardBus PC cards.

CardBus supports the new standard of 32-bit PC cards. The bus provides superior performance for the greater demands of multimedia data transmission.

If you use a storage device such as a CD-ROM or HDD connected to a 16-bit PC card, modem speed might be slow or communication interrupted.

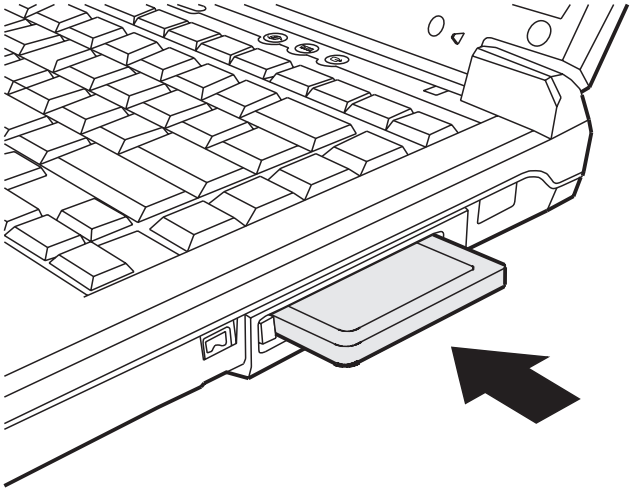
Installing a PC card

Two PC card connector is located on the right side of the computer. The computer's hot-install feature lets you install a PC card while the computer's power is on.

Do not install a PC card while the computer is in Standby or Hibernation mode. Some cards might not work properly.

To install a PC card, follow the steps below.

1. Insert the PC card.
2. Press gently to ensure a firm connection.

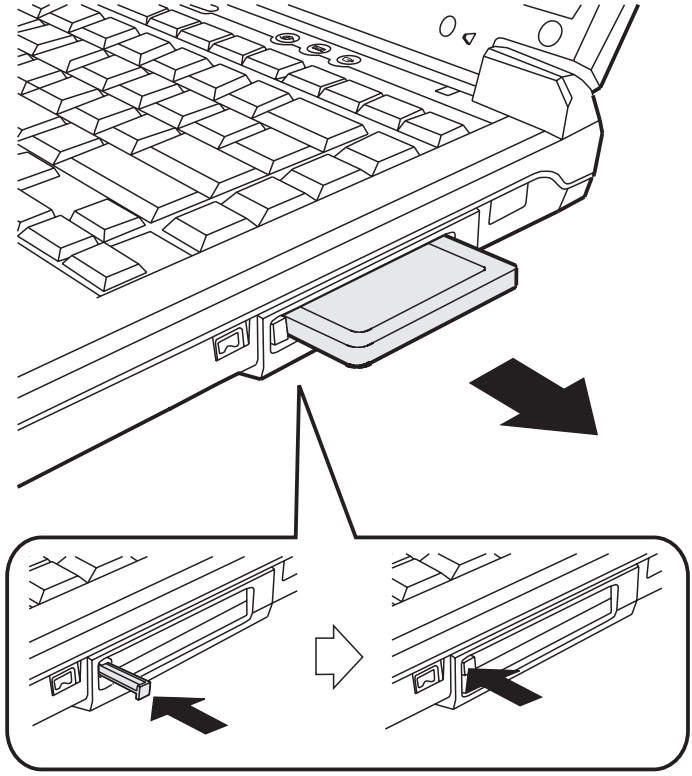


Installing a PC card

After installing the card, refer to the card's documentation and check the configuration in Windows to make sure it is appropriate for your card.

Removing a PC card

1. Click the **Safety Remove Hardware** icon on the Task Bar.
2. Click the PC card you want to remove.
3. Press the eject button of the PC card to extend the button.
4. Press the extended eject button to pop the card out slightly.
5. Grasp the PC card and remove it.



Removing a PC card

Memory expansion

You can install additional memory in the computer's memory module sockets to increase the amount of RAM. This section describes how to install and remove a memory module.

Before you install or remove a memory module, turn off the computer with the Shut Down option in the Windows Start menu. If you install or remove a memory module while the computer is in Standby or Hibernation mode, data will be lost.

Some memory modules can be physically installed but are not compatible with the computer. In this case the computer will issue a warning.

Satellite A30 series: *There will be a long beep, 3 short beeps, 3 more short beeps and then a long beep when you turn the power on. In this case, shut down the power and remove the incompatible memory module.*

If you want to upgrade system memory, you should only use certified modules. Ask your vendor or check the TOSHIBA web site for a list of approved memory products.

Installing memory module

If you use the computer for a long time, the memory modules will become hot. In this case, let the memory modules cool to room temperature before you replace them.

Follow these steps to install a memory module:

1. Set the computer to boot mode and turn off the power.

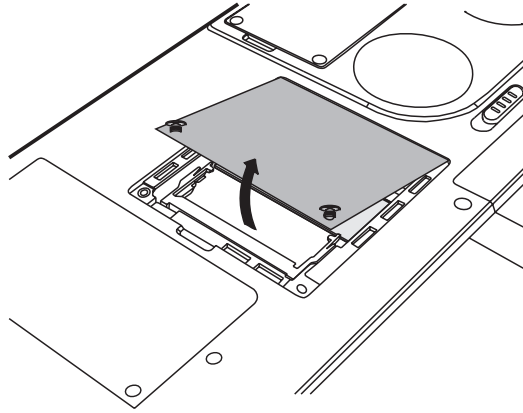
Do not try to install a memory module under the following conditions. You can damage the computer and the module:

The computer is turned on.

The computer was shut down using the Stand by mode.

2. Remove all cables connected to the computer.
3. Turn the computer upside down and remove the battery (refer to Chapter 6, *Power and Power-Up Modes*).
4. Remove the screws securing the memory module socket cover.

5. Slide your fingernail or a thin object under the cover and lift it off.

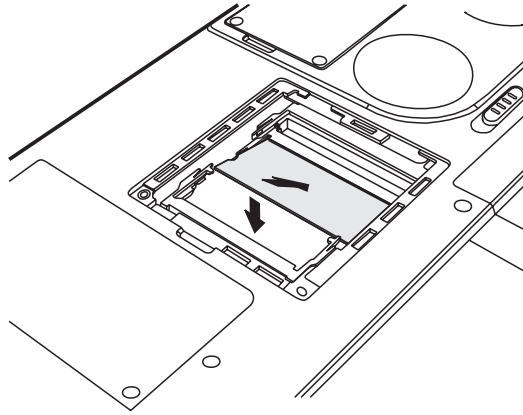


Removing the memory module socket cover

6. Fit the module's connectors into the computer's connectors at about a 45 degree angle and press the module carefully to ensure a firm connection.

Do not touch the connectors on the memory module or on the computer. Debris on the connectors may cause memory access problems.

7. Push the module down so it lies flat. Latches on either side will click into place to secure the module.



Installing a module

8. Seat the cover and secure it with one screw.
9. Replace the battery pack as described in Chapter 6, *Power and Power-Up Modes*.
10. Turn the power on and make sure the added memory is recognized.

Removing memory module

If you use the computer for a long time, the memory modules will become hot. In this case, let the memory modules cool to room temperature before you replace them.

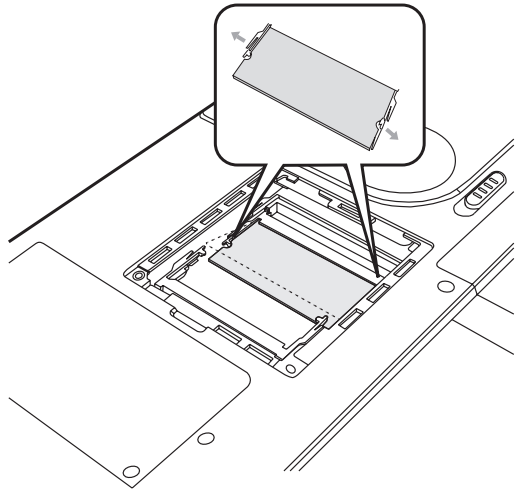
To remove the memory module, make sure the computer is in boot mode then:

1. Be sure the power is off and all cables are disconnected from the computer.

Do not try to remove a memory module with the computer turned on. You can damage the computer and the module.

2. Turn the computer upside down and remove the battery and one screw securing the memory module socket cover.
3. Slide your fingernail or a thin object under the cover and lift it off.
4. Push the latches to the outside to release the module. A spring will force one end of the module up.
5. Grasp the module and pull it out.

Do not touch the connectors on the memory module or on the computer. Debris on the connectors may cause memory access problems.



Removing the memory module

6. Seat the cover and secure it with one screw.
7. Replace the battery.

Additional battery pack

You can increase the portability of the computer with additional battery packs. If you're away from an AC power source and your battery runs low, you can replace it with a freshly charged battery. See Chapter 6, *Power and Power-Up Modes*.

Additional AC adaptor

If you frequently carry the computer to different sites such as your home and office, having an AC adaptor at each location reduces the weight and bulk of your load. If you purchase an additional AC adaptor, please only use the one recommended by your TOSHIBA dealer and which corresponds to your computer.

Parallel printer

You can connect any standard Centronics-compatible parallel printer to your computer. All you need is an IBM PC™ parallel printer cable. Your dealer can supply one or you can purchase one at most computer stores.

The cable's connectors are designed so that it is impossible for you to connect them incorrectly. To connect a printer, follow these steps:

1. Turn off the computer.
2. Insert one end of the cable into the computer's parallel port.
3. Tighten the screws that fasten the cable connector to the computer's parallel port.
4. Insert the other end of the cable into the printer's parallel connector.
5. Fasten the connector to the printer with the clips on the parallel port.
6. Turn on the printer.
7. Turn on the computer.
8. Windows XP may automatically recognize the printer and you can begin printing immediately. If it doesn't, install the printer with the Add Printer Wizard. To access the **Add Printer Wizard**, click **Start**, point to **Settings**, click **Printers** and double click the **Add Printer** icon.

External monitor

An external analog monitor can be connected to the external monitor port on the computer. The computer supports VGA and Super VGA video modes.

To connect a monitor, follow the steps below.

1. Turn the computer off.
2. Connect the monitor to the external monitor port.
3. Turn the monitor's power on.
4. Turn the computer on.

When you turn on the power, the computer automatically recognizes the monitor and determines whether it is colour or monochrome.

To change the display settings, press **Fn + F5**. If you disconnect the monitor before you turn the computer off, be sure to press **Fn + F5** to switch to the internal display. Refer to Chapter 5, *The Keyboard*, for details on using hot keys to change the display setting.

Television

A television can be connected to the video out port on the computer.

To connect a television, follow the steps below.

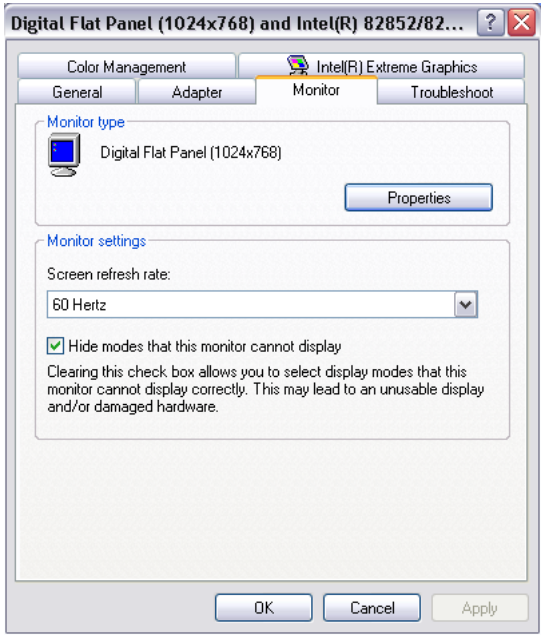
1. Turn the computer off.
2. Use a video cable (not supplied on all models) to connect the television to the video out port.
3. Turn the television on.
4. Turn the computer on.

You can use the hotkeys **Fn + F5** or use the **TV-Out** button to change the display device. Refer to Chapter 5, *The Keyboard*.

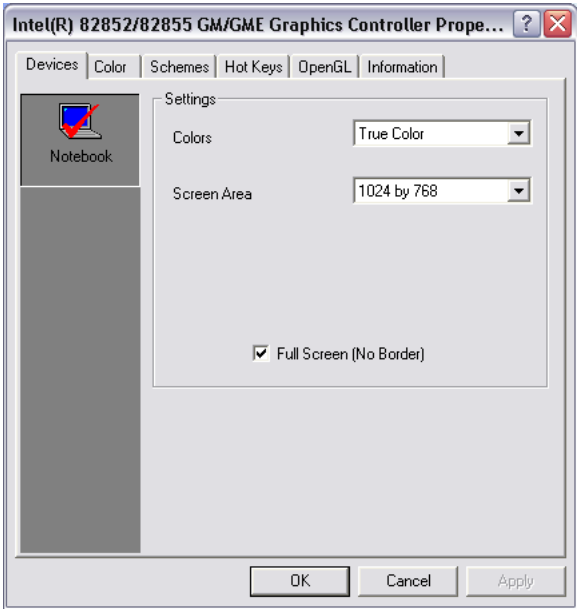
If a television is connected to the computer, set the TV type in Display Properties.

To set the TV type, follow the steps below:

1. Click **Start** and then select **Control Panel**.
2. Choose **Appearance** and **Themes**.
3. Click **Display** to open the Display Properties dialog box.
4. Click the **Settings** tab and click the **Advanced** button.
5. In the Advanced dialog box, go to the **Monitor** tab and select the **Hide modes that this monitor cannot display** option.



6. Next, click the **Intel® Extreme Graphics** tab, and then click **Graphics Properties**.
7. Select the appropriate device from the icon panel on the left. Set that device's resolution. When that device is the primary display device, the selected resolution will be used automatically.



8. Click **OK**.

i.LINK (IEEE1394)

i.LINK (IEEE1394) is used for high-speed data transfer for a range of compatible devices such as:

- Digital video cameras
- Hard disk drives
- MO drives
- Optical media drives

i.LINK uses a four-pin connector, which does not carry electric current. External devices will need their own power supply.

Precautions

- Make a back-up of your data before transferring it to the computer. There is a possibility that the original data will be damaged. There is a particular risk that some frames will be deleted in the case of digital video transfer.
- Do not transfer data in areas where static electricity is easily generated or in areas subjected to electronic noise. Data can be destroyed.
- If you are transferring data through an IEEE1394 hub, do not connect or disconnect other devices from the hub during data transfer. There is a likelihood that data will be damaged. Connect all devices to the hub before you turn on the computer's power.

Connecting

1. Make sure the connectors are properly aligned and plug the i.LINK (IEEE1394) cable into the computer.
2. Plug the other end of the cable into the device.

Note the following when you use i.LINK:

- You may need to install drivers for your i.LINK devices.
- Not all i.LINK devices have been tested. Therefore, compatibility with all i.LINK devices cannot be guaranteed.
- Use S100, S200 or S400 cables no longer than three meters.
- Some devices might not support standby or automatic off functions.
- Do not connect or disconnect an i.LINK device while it is using an application or when the computer is automatically shutting it down to save power. Data might be destroyed.

Disconnecting

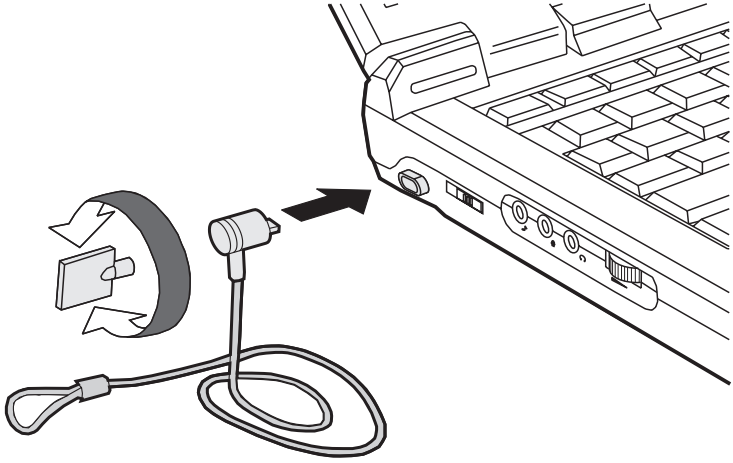
1. Click the **Eject or Remove Hardware** icon on the Task Bar.
2. Point to **i.LINK (IEEE1394) device** and click.
3. Disconnect the cable from the computer then from the i.LINK device.

Refer also to the documentation that came with your i.LINK device.

Security lock

A security lock enables you to anchor your computer to a desk or other heavy object to help prevent unauthorized removal of the computer.

Attach one end of a cable to the desk and the other end to the security lock slot on the right side of the computer.



Security lock

Chapter 8

Troubleshooting

TOSHIBA designed the computer for durability. However, should problems occur, following the procedures in this chapter can help to determine the cause.

All readers should become familiar with this chapter. Knowing what might go wrong can help prevent problems from occurring.

Problem solving process

Resolving problems will be much easier if you observe the following guidelines:

- Stop immediately when you recognize a problem exists. Further action may result in data loss or damage. You may destroy valuable problem-related information that can help solve the problem.
- Observe what is happening. Write down what the system is doing and what actions you performed immediately before the problem occurred. If you have a printer attached, print a copy of the screen using **PrtSc**.
- Isolate the problem. Using the tools available to you, such as the troubleshooting tips in this chapter, try to discover the specific actions that caused the problem.

The questions and procedures offered in this chapter are meant as a guide, they are not definitive problem solving techniques. Many problems can be solved simply, but a few may require help from your dealer. If you find you need to consult your dealer or others, be prepared to describe the problem in as much detail as possible.

Preliminary checklist

Consider the simplest solution first. The items in this checklist are easy to fix and yet can cause what appears to be a serious problem.

- Make sure you turn on all peripheral devices before you turn on the computer. This includes your printer and any other external device you are using.
- Before you attach an external device, turn the computer off. When you turn the computer back on it recognizes the new device.
- Make sure all options are set properly in the setup program.
- Check all cables. Are they correctly and firmly attached? Loose cables can cause signal errors.
- Inspect all connecting cables for loose wires and all connectors for loose pins.
- Check that your diskette, CD-ROM or DVD-ROM is correctly inserted and that the diskette's write protect tab is correctly set.

Make notes of your observations and keep them in a permanent error log. This will help you describe your problems to your dealer. If a problem recurs, the log will help you identify the problem faster.

Analysing the problem

Sometimes the system gives clues that can help you identify why it is malfunctioning. Keep the following questions in mind:

- Which part of the system is not operating properly: keyboard, diskette drives, hard disk drive, printer, display. Each device produces different symptoms.
- Is the operating system configuration set properly? Check the configuration options.
- What appears on the display screen? Does it display any messages or random characters? Print a copy of the screen if you have a printer attached. Look up the messages in the software and operating system documentation. Check that all connecting cables are correctly and firmly attached. Loose cables can cause erroneous or intermittent signals.
- Do any indicators light? Which ones? What colour are they? Do they stay on or blink? Write down what you see.
- Do you hear any beeps? How many? Are they long or short? Are they high pitched or low? Is the computer making any unusual noises? Write down what you hear.

Record your observations so you can describe them to your dealer.

Software

The problems may be caused by your software or diskette. If you cannot load a software package, the media may be damaged or the program might be corrupted. Try loading another copy of the software.

If an error message appears while you are using a software package, check the software documentation. These documents usually include a problem solving section or a summary of error messages.

Next, check any error messages in the OS documentation.

Hardware

If you cannot find a software problem, check your hard- ware. First run through the items in the preliminary checklist above. If you still cannot correct the problem, try to identify the source. The next section provides checklists for individual components and peripherals.

Hardware and system checklist

This section discusses problems caused by your computer's hardware or attached peripherals. Basic problems may occur in the following areas:

- System start-up
- Self test
- Power
- Overheating power down
- AC Power
- Battery
- Password
- Keyboard
- LCD panel
- Hard disk drive
- DVD-RAM drive
- DVD Multi drive
- CD-RW/DVD-ROM drive
- DVD-R/-RW drive
- DVD-ROM drive
- PC Card
- Printer
- Monitor
- Sound system
- Pointing device
- USB
- TV output signal
- Standby/Hibernation
- Memory expansion
- Modem
- i.LINK (IEEE1394)
- Wireless LAN
- LAN
- Infrared port

System start-up

When the computer does not start properly, check the following items:

- Self Test
- Power Sources
- Power-on Password

Self test

When the computer starts up, the self test will be run automatically, and the following will be displayed:

```
In Touch with Tomorrow
TOSHIBA
```

This message remains on the screen for a few seconds.

If the self test is successful, the computer tries to load the operating system. Depending on how the Boot Priority is set in the computer's BIOS. If any of the following conditions are present, the self test failed:

- The computer stops and does not proceed to display information or messages except the TOSHIBA logo.
- Random characters appear on the screen, and the system does not function normally.
- The screen displays an error message.

Turn off the computer and check all cable connections as well as PC Card and memory module connections. If the test fails again, contact your dealer.

Power

When the computer is not plugged into an AC outlet, the battery pack is the primary power source. However, your computer has a number of other power resources, including intelligent power supply, Real Time Clock battery. These resources are interrelated and any one could affect apparent power problems. This section provides check lists for AC power and the battery. If you cannot resolve a problem after following them, the cause could lie with another power resource. In such case, contact your dealer.

Overheating power down

If the computer's internal temperature becomes too high, the computer will automatically shut down.

AC power

If you have trouble turning on the computer with the AC adaptor connected, check the **DC IN** indicator. Refer to Chapter 6, *Power and Power-Up Modes*, for more information.

Problem	Procedure
AC adaptor doesn't power the computer (**DC IN** indicator does not glow green)	Check the connections. Make sure the cord is firmly connected to the computer and a power outlet. Check the condition of the cord and terminals. If the cord is frayed or damaged, replace it. If the terminals are soiled, wipe them with cotton or a clean cloth. If the AC adaptor still does not power the computer, contact your dealer.

Battery

If you suspect a problem with the battery, check the **DC IN** indicator as well as the indicators for the battery. For information on indicators and battery operation see Chapter 6, *Power and Power-Up Modes*.

Problem	Procedure
Battery doesn't power the computer	The battery may be discharged. Connect the AC power cord to charge the battery.
Battery doesn't charge when the AC power cord is attached (**Battery** indicator does not glow amber)	If the battery is completely discharged, it will not begin charging at once. Wait a few minutes. If the battery still does not charge, make sure the outlet is supplying power. Plug in an appliance and see if it works. If it doesn't, try another power source. Check whether the battery is hot or cold. If the battery is too hot or too cold, it will not charge properly. Let it reach room temperature. Unplug the AC adaptor and remove the battery to make sure the terminals are clean. If necessary wipe them with a soft dry cloth dipped in alcohol. Connect the AC adaptor and replace the battery. Check the **Battery** indicator. If it does not glow, let the computer charge the battery for at least 20 minutes. If the **Battery** indicator glows after 20 minutes, let the battery continue to charge for at least another 20 minutes before turning on the computer. If the indicator still does not glow, the battery may be at the end of its operating life. Replace it. If you do not think the battery is at the end of its operating life, see your dealer.
Battery doesn't power the computer as long as expected	Check the power consumption settings in the TOSHIBA Power Management Utility. Consider using a power saving mode.

Keyboard

Keyboard problems can be caused by your setup configuration. For more information refer to Chapter 5, *The Keyboard*.

Problem	Procedure
Some letter keys produce numbers	Check that the numeric keypad overlay is not selected. Press **Fn + F10** and try typing again.
Output to screen is garbled	Make sure the software you are using is not remapping the keyboard. Remapping involves reassigning the meaning of each key. See your software's documentation. If you are still unable to use the keyboard, consult your dealer.

LCD panel

Problem	Procedure
Lines appear broken	Check if you are in DOS mode. In DOS, lines may appear broken, because of the LCD screen's higher resolution. The Windows display should appear normal.
No display	Press hotkeys **Fn + F5** to change the display priority, to make sure it is not set for an external monitor. Make sure instant security was not activated. Try entering your password, if you have one registered. Or, turn the power off and back on to clear instant security .
Problems above remain unresolved or other problems occur	Refer to your software's documentation to determine if the software is causing the difficulty. Contact your dealer if the problems continue.

Hard disk drive

Problem	Procedure
Computer does not boot from hard drive	Insert a system diskette and reboot. There may be a problem with your operating system files. Refer to your OS documentation.
Slow performance	Your files may be fragmented. Run SCANDISK and defragmenter to check the condition of your files and disk. Refer to your OS documentation or online HELP for information on running SCANDISK and the defragmenter. Contact your dealer if the problems continue.

Optical media device

For more information, refer to Chapter 2, *The Grand Tour*, and to Chapter 4, *Operating Basics*.

Problem	Procedure
You cannot access a disc in the drive	Make sure the drive's drawer is securely closed. Press gently until it clicks into place. Open the drawer and make sure the disc is properly seated. It should lie flat with the label facing up. A foreign object in the drawer could block laser light from reading the disc. Make sure there is no obstruction. Remove any foreign object. Check whether the disc is dirty. If necessary, wipe it with a clean cloth dipped in water or a neutral cleaner. See the *Disk care* section in Chapter 4, *Operating Basics*, for details on cleaning. Check your config.sys and autoexec.bat files to make sure they have the necessary drivers and execution lines.

Problem	Procedure
Some CDs run correctly, but others do not	The software or hardware configuration may be causing a problem. Make sure the hardware configuration match's your software's needs. Check the disc's documentation. Check the type of disc you are using. The drive supports: CD-DA, CD-ROM, CD-R/W, CD-R, CD-ROM XA (except ADPCM), CD-I Ready, PhotoCD, CD-Extra (CD+), CD-text, DVD-Video, DVD-ROM, DVD-R, DVD-RW, DVD-RAM Check the region code on the DVD. It must match that on the DVD-ROM drive. Region codes are listed in the *Drives* section in Chapter 2, *The Grand Tour*. Contact your dealer if the problems continue.

Multidrive & DVD-R/RW

For more information, refer to Chapter 2, *The Grand Tour*, and to Chapter 4, *Operating Basics*.

Problem	Procedure
You cannot access a disc in the drive	Make sure the drive's drawer is securely closed. Press gently until it clicks into place. Open the drawer and make sure the disc is properly seated. It should lie flat with the label facing up. A foreign object in the drawer could block laser light from reading the disc. Make sure there is no obstruction. Remove any foreign object. Check whether the disc is dirty. If necessary, wipe it with a clean cloth dipped in water or a neutral cleaner. See the *Disk care* section in Chapter 4, *Operating Basics*, for details on cleaning. Check your config.sys and autoexec.bat files to make sure they have the necessary drivers and execution lines.

Problem	Procedure
Some CDs run correctly, but others do not	The software or hardware configuration may be causing a problem. Make sure the hardware configuration match's your software's needs. Check the disc's documentation. Check the type of disc you are using. The drive supports: CD-DA, CD-ROM, CD-R/W, CD-R, CD-ROM XA (except ADPCM), CD-I Ready, PhotoCD, CD-Extra (CD+), CD-text, DVD-Video, DVD-ROM, DVD-R, DVD-RW, DVD-RAM Check the region code on the DVD. It must match that on the DVD drive. Region codes are listed in the *Drives* section in Chapter 2, *The Grand Tour*.
Cannot write correctly	If you have trouble writing, make sure you are observing the following precautions: Use only media recommended by TOSHIBA. Do not use the mouse or keyboard during writing. Use only the software supplied with the computer for recording. Do not run or start other software during writing. Do not jar the computer during writing. Do not connect/disconnect external devices or install/remove internal cards during writing. If problems persist, contact your dealer.

Printer

Refer also to the Parallel printer section in Chapter 7, *Optional Devices*, and to the troubleshooting and other relevant sections in your printer and software documentation.

Problem	Procedure
Printer does not turn on	Check that the printer is connected to an electric. outlet. Make sure the outlet is supplying power by plugging in an appliance.
Computer/printer do not communicate	Make sure the printer is turned on and is online (ready to use). Inspect the cable connecting the printer to the computer for damage. Make sure it is securely connected. A parallel printer connects to the parallel port. Make sure the port is configured correctly. Make sure your software is configured to recognize the printer. Check your printer and software documentation.
Printer error	Check your printer documentation. If problems persist, contact your dealer.

PC Card

Refer also to Chapter 7, *Optional Devices*.

Problem	Procedure
PC Card error occurs	Reseat the PC Card to make sure it is firmly connected. Make sure the connection between the external device and the card is firm. Check the card's documentation. If problems persist, contact your dealer.

Infrared port

Refer also to the documentation for your IrDA compatible device and related software.

Problem	Procedure
Infrared devices do not work as expected	Make sure there is no obstruction blocking not communication between the computer and the target device. If problems persist, contact your dealer.

Sound system

Problem	Procedure
No sound is heard	Adjust the volume control dial. Check the software volume settings. Make sure the headphone connection is secure. Check Windows Device Manager. Make sure the sound function is enabled and that settings for I/O address, Interrupt level and DMA are correct for your software and do not conflict with other hardware devices that you have connected to the computer. If problems persist, contact your dealer.

Pointing device

If you are using a USB mouse, also refer to the *USB* section in this chapter and to your mouse documentation.

Touch pad

Problem	Procedure
On-screen pointer does not respond to Pad operation	The system might be busy. If the pointer is shaped as an hourglass, wait for it to resume its normal shape and try again to move it. You may also press **FN + F9** to enable the Touch pad and then try again to move it.
Double-tapping does not work	Try changing the double-click speed setting in the mouse control utility. **1.** Open the **Control Panel**, select the **Mouse** icon and press **Enter**. **2.** Click the **Buttons** tab. **3.** Set the double-click speed as instructed and click **OK**.

Problem	Procedure
The mouse pointer moves too fast or too slow	Try changing the speed setting in the mouse control utility. **1.** Open the **Control Panel**, select the **Mouse** icon and press **Enter**. **2.** Click the **Pointer Options** tab. **3.** Set the speed as instructed and click **OK**. If problems persist, contact your dealer.

USB mouse

Problem	Procedure
On-screen pointer does not respond to mouse operation	The system might be busy. If the pointer is shaped as an hourglass, wait for it to resume its normal shape and try again to move it. Make sure the mouse is properly connected to the USB port.
Double-clicking does not work	Try changing the double-click speed setting in the mouse control utility. **1.** Open the **Control Panel**, select the **Mouse** icon and press **Enter**. **2.** Click the **Buttons** tab. **3.** Set the double-click speed as instructed and click **OK**.
The mouse pointer moves too fast or too slow	Try changing the speed setting in the mouse control utility. **1.** Open the **Control Panel**, select the **Mouse** icon and press **Enter**. **2.** Click the **Pointer Options** tab. **3.** Set the speed as instructed and click **OK**.
The mouse pointer moves erratically	The mouse might be dirty. Refer to your mouse documentations for instructions on cleaning. If problems persist, contact your dealer.

USB

Refer also to your USB device's documentation.

Problem	Procedure
USB device does not work	Check for a firm cable connection between the USB ports on the computer and the USB device. Make sure the USB device drivers are properly installed. Refer to your Windows documentation for information on checking the drivers. If you are using an operating system that does not support USB, you can still use a USB mouse and/or USB keyboard. If these devices do not work, make sure the USB KB/Mouse Legacy Emulation item in BIOS is set to **Enabled**. This feature works only for mouse and keyboard. Also, the mouse and keyboard must be connected, before you boot the computer. If problems persist, contact your dealer.

TV output signal

Problem	Procedure
Display on TV is poor	Make sure the TV type is correct for your area: NTSC (US) or PAL (Europe).
No display	Try adjusting the contrast and brightness controls on the external monitor. Press hotkeys **Fn + F5** to change the display. Refer to Chapter 5, *Keyboard*. If problems persist, contact your dealer.

If you turn the computer off in Standby mode while the display is on TV, the computer will select either the internal LCD or an external computer CRT as the display device.

Standby/Hibernation

Problem	Procedure
The system will not enter Standby/Hibernation	Is Windows Media™ Player open? The system might not enter Standby/Hibernation, if Windows Media Player is either playing a selection or finished playing a selection. Close Windows Media Player before you select Standby/ Hibernation. If problems persist, contact your dealer.

Memory expansion

Refer also to Chapter 8, *Optional Devices*, for information on installing memory modules.

Problem	Procedure
Satellite A30 Series. The computer hangs up and issue beep sounds. (A long beep, three short beeps, three short beeps, and then a long beep.)	Make sure the memory module installed in the expansion slot is compatible with the computer. If an incompatible module has been installed, follow the steps below. **1.** Turn off the power. **2.** Disconnect the AC adaptor and all peripheral devices. **3.** Remove the battery pack. **4.** Remove the memory module. **5.** Replace the battery pack and/or connect the AC adaptor. **6.** Turn on the power. If problems persist, contact your dealer.

Modem

Problem	Procedure
Communication software can't initialise the modem	Make sure the computer's internal modem settings are correct. Refer to Phone and Modem Options Properties in the Control Panel.
You can hear a dial tone but can't make a call	If the call is going through a PBX machine, make sure the communication application's tone dial detection feature is disabled.
You place a call, but a connection can't be made	Make sure the settings are correct in your communications application.
After making a call you can't hear a ring	Make sure the tone or pulse selection in your communications application is set correctly.
Communication is cut off unexpectedly	The computer will automatically cut off communication when connection with the carrier is not successful for a set time interval. Try lengthening this time interval.
A **CONNECT** display is quickly replaced by **NO CARRIER**	Check the error control setting in your communications application.
Character display becomes garbled during a communication	In data transmission, make sure the parity bit and stop bit settings correspond with those of the remote computer. Check the flow control and communication protocol.
You cannot receive an incoming call	Check the **rings before auto answer** setting in your communications application. If problems persist, contact your dealer.

LAN

Problem	Procedure
Cannot access LAN	Check for a firm cable connection between the LAN jack and the LAN HUB.
Wake up on LAN does not work	Make sure the AC adaptor is connected. You cannot access a LAN using the computer's battery power. Check the TOSHIBA HW Setup program. The Wake-up on LAN option of LAN tab should be set to Enabled. If problems persist, consult your LAN administrator.

Wireless LAN

If the following procedures do not restore LAN access, consult your LAN administrator.

For more information on wireless communication, refer to Chapter 4, *Operating Basics*.

Problem	Procedure
Cannot access Wireless LAN	Make sure the computer's wireless communication switch is set to on. Confirm the **Fn + F8** function. If problems persist, consult your LAN administrator.

Monitor

Refer also to Chapter 7, *Optional Devices*, and to your monitor's documentation.

Problem	Procedure
Monitor does not turn on	Make sure that the external monitor's power switch is on. Confirm that the external monitor's power cable is plugged into a working power outlet.
No display	Try adjusting the contrast and brightness controls on the external monitor. Press hotkeys **Fn + F5** to change the display priority and make sure it is not set for the internal display.
Display error occurs	Check that the cable connecting the external monitor to the computer is attached firmly. If problems persist, contact your dealer.

i.LINK (IEEE1394)

Problem	Procedure
i.LINK device does not function	Make sure the cable is securely connected to the computer and to the device. Make sure the device's power is turned on. Reinstall the drivers. Open the Windows Control Panel and double-click the **Add New Hardware** icon. Follow the on-screen directions. Restart Windows. If problems persist, contact your dealer.

If you need further assistance

If you require any additional help using your computer or if you are having problems operating the computer, you may need to contact TOSHIBA for additional technical assistance.

Before you call

Some problems you experience may be related to software or the operating system, it is important to investigate other sources of assistance first. Before contacting TOSHIBA, try the following:

- Review troubleshooting sections in the documentation for software and peripheral devices.
- If a problem occurs when you are running software applications, consult the software documentation for troubleshooting suggestions. Call the software company's technical support for assistance.
- Consult the dealer you purchased your computer and/or software from. They are your best sources for current information and support.

Where to write

If you are still unable to solve the problem and suspect that it is hardware related, write to TOSHIBA at the location listed in the accompanying warranty booklet or visit www.toshiba-europe.com on the Internet.

Appendix A

Specifications

This appendix summarizes the computer's technical specifications.

Environmental Requirements

Conditions	Ambient temperature	Relative humidity
Operating	5°C to 30°C	10% to 90%
Non-operating	-20°C to 65°C	
Conditions	**Altitude (from sea level)**	
Operating	sea level to 3,000 meters	
Non-operating	sea level to 10,000 meters	

Built-in Modem

Network control unit (NCU)

Type of NCU	AA
Type of line	Telephone line (analog only)
Type of dialling	Pulse Tone
Control command	AT commands EIA-578 commands
Monitor function	Computer's speaker

Communication specifications

Communication system	Data: Fax:	Full duplex Half duplex
Communication protocol	**Data:** ITU-T-Rec (Former CCITT)	V.21/V.22/V.22bis/V.32/ V.32bis/V.34/V.90/V.92 (only for USA and Canada)
	Bell	103/212A
	Fax ITU-T-Rec (Former CCITT)	V.17/V.29/V.27ter/ V.21 ch2
Communication speed	Data transmission and reception 300/1200/2400/4800/ 7200/9600/12000/ 14400/16800/19200/ 21600/24000/26400/ 28800/31200/33600 bps Data reception only with V.90/V.92 28000/29333/30666/ 32000/33333/34666/ 36000/37333/38666/ 40000/41333/42666/ 44000/ 45333/46666/48000/ 49333/50666/52000/ 53333/54666/56000 bps Fax: 2400/4800/7200/9600/12000/14400 bps	
Error correcting	MNP class 4 and ITU-T V.42	
Data compression	MNP class 5 and ITU-T V.42bis	

Appendix B

AC Power Cord and Connectors

The power cord's AC input plug must be compatible with the various international AC power outlets and the cord must meet the standards for the country/region in which it is used. All cords must meet the following specifications:

Length:	Minimum 2 metres
Wire size:	Minimum 0.75 mm2
Current rating:	Minimum 2 Amperes
Voltage rating:	125 or 250 VAC (depending on country/region's power standards)

Certification agencies

U.S. and Canada:	UL listed and CSA certified No. 18 AWG, Type SVT or SPT-2 two conductor
Australia:	AS
Japan:	DENANHO

Europe:

Austria:	OVE
Belgium:	CEBEC
Denmark:	DEMKO
Finland:	SETI
France:	UTE

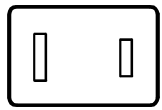
Germany:	VDE
Italy:	IMQ
The Netherlands:	KEMA
Norway:	NEMKO
Sweden:	SEMKO
Switzerland:	SEV
United Kingdom:	BSI

In Europe, power cords must be VDE type, H05VVH2-F and two conductor.

For the United States and Canada, plug configuration must be a 2-15P (250 V) or 1-15P (125 V) as designated in the U.S. National Electrical code handbook and the Canadian Electrical Code Part II.

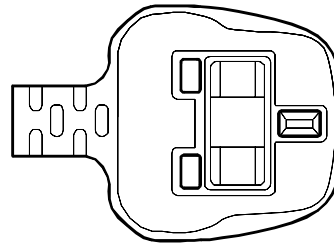
The following illustrations show the plug shapes for the U.S.A. and Canada, the United Kingdom, Australia and Europe.

USA and Canada



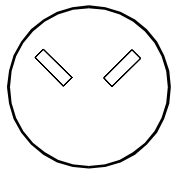
UL approved
CSA approved

United Kingdom



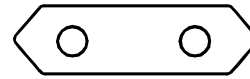
BS approved

Australia



AS approved

Europe

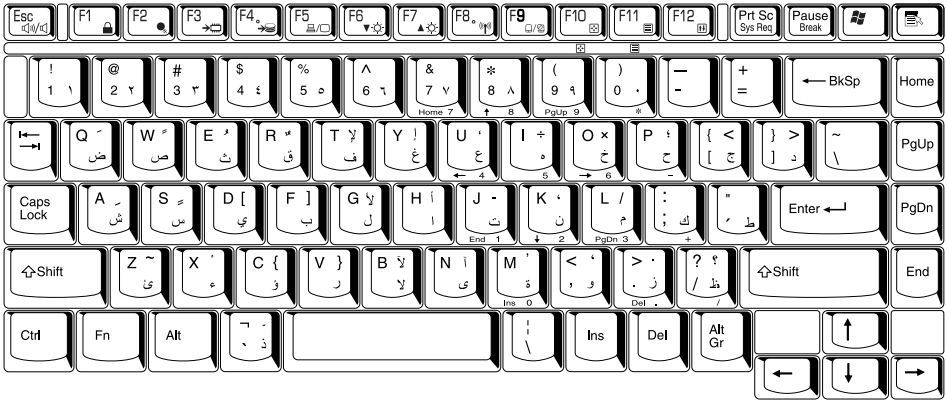


Approved by the appropriate agency

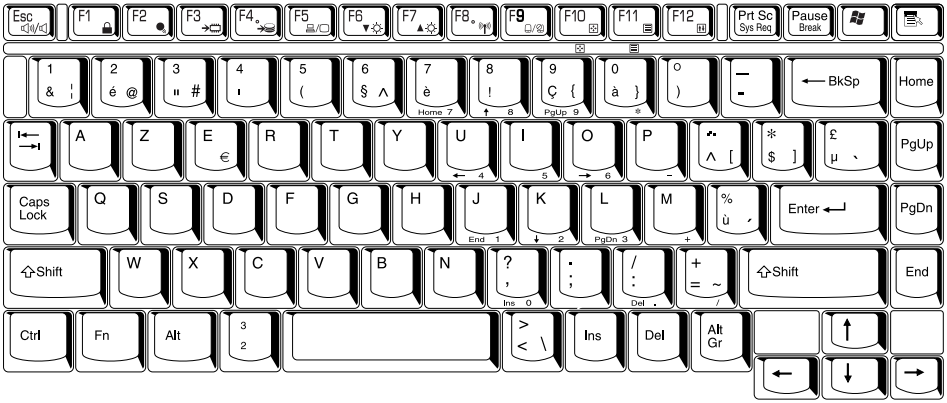
Appendix C

Keyboard Layouts

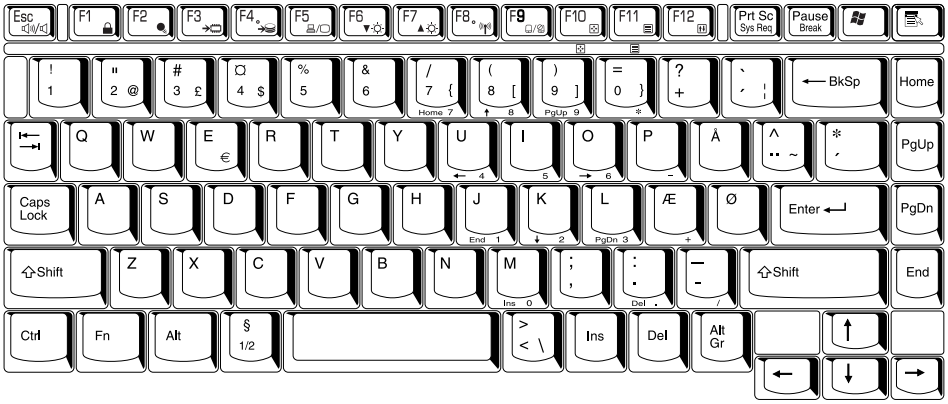
Arabic



Belgian

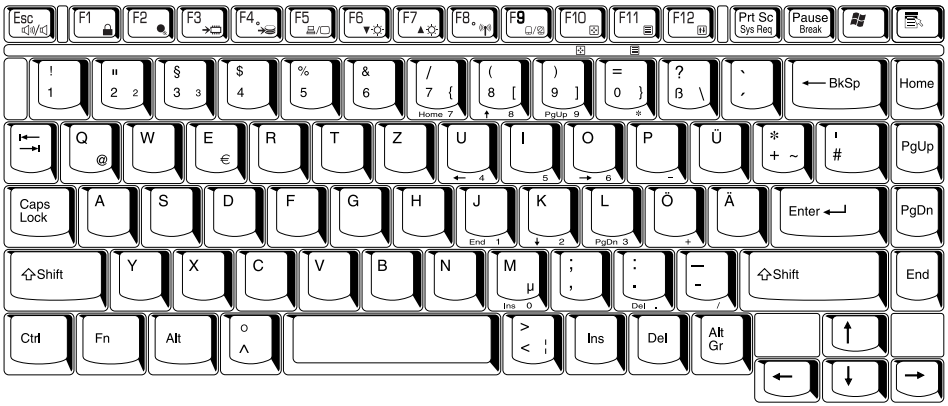


Danish

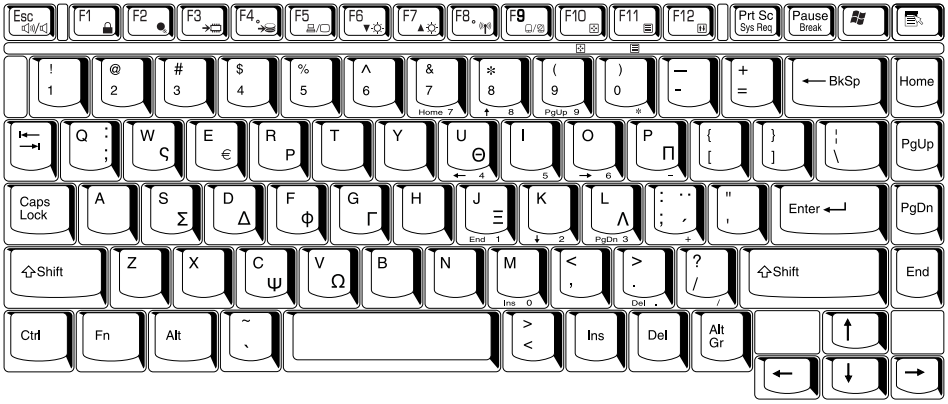


French

German



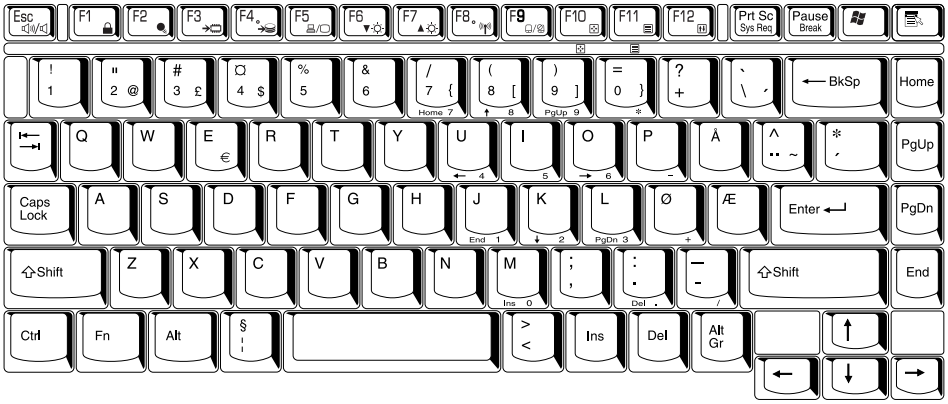
Greek



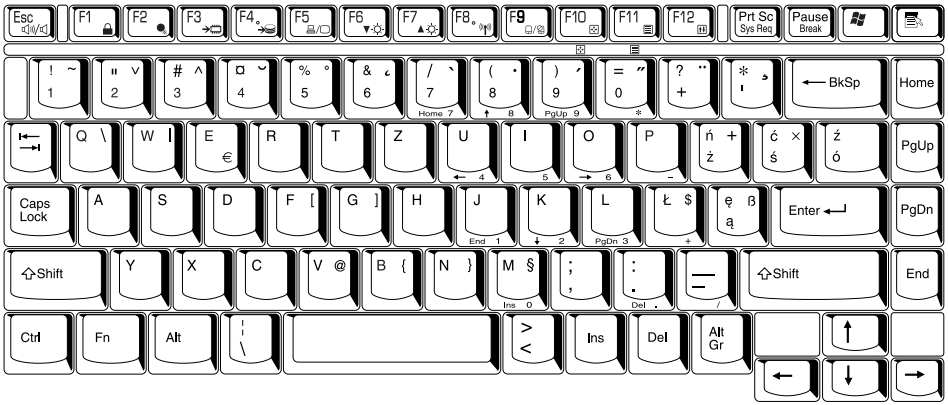
Hebrew

Italian

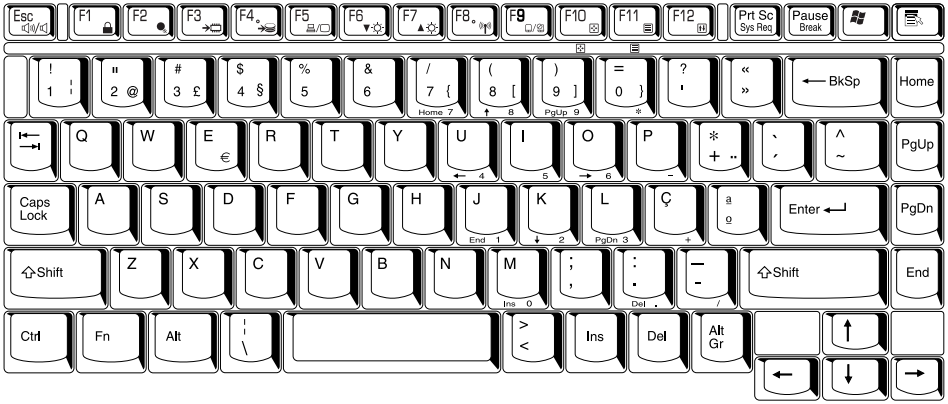
Norwegian



Polish



Portuguese

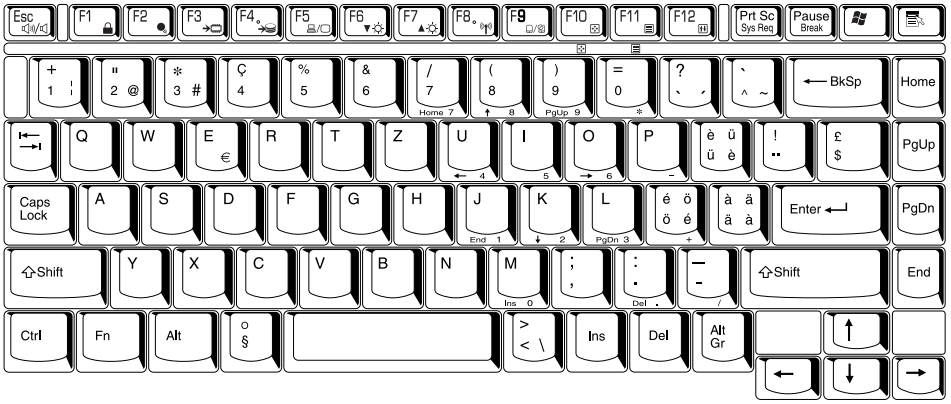


Russian

Spanish

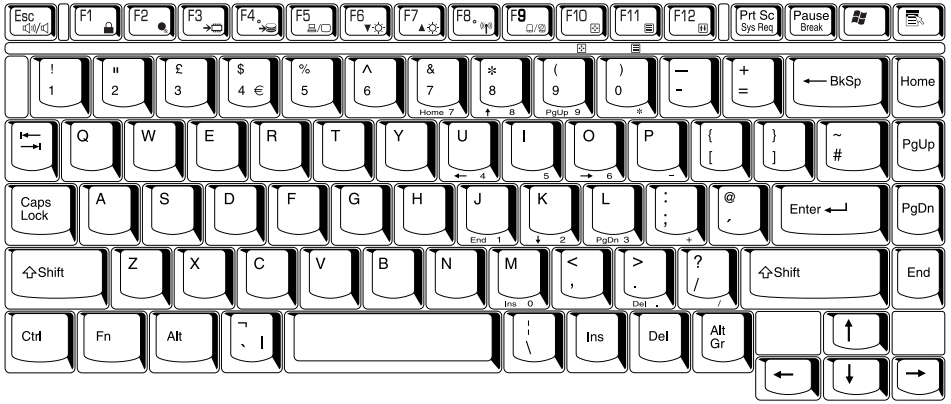
Swedish

Swiss-German

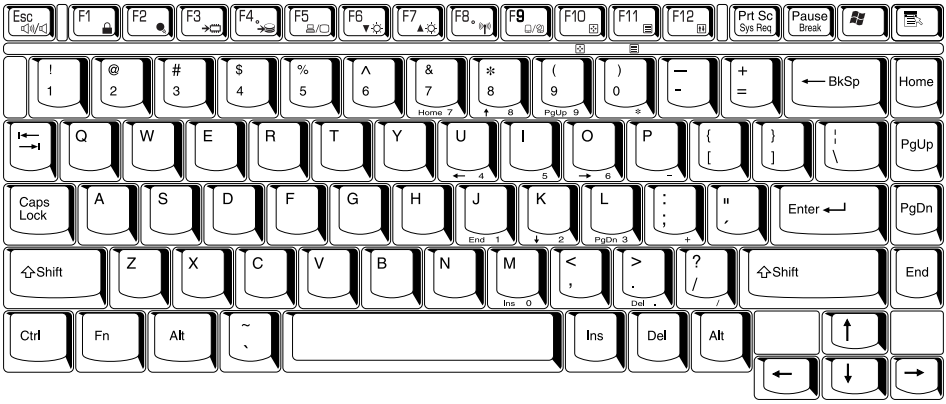


Turkish

UK English



US English


Esc
F1
F2
F3
F4
F5
F6
F7
F8
F9
F10
F11
F12
Prt Sc
Sys Req
Pause
Break
BkSp
Home
Q
W
E
R
T
Y
U
I
O
P
PgUp
Caps Lock
A
S
D
F
G
H
J
K
L
Enter
PgDn
Shift
Z
X
C
V
B
N
M
Shift
End
Ctrl
Fn
Alt
Ins
Del
Alt

Appendix D

Display Modes

This appendix is a table of the display mode options of your computer's Intel 852GME Mobility Graphics Controller; when display device is set to external monitor.

CRT Display Resolution	Colour Depth	Refresh Rate (Hz)
800x600	16bpp 32bpp	60 75 85 100 60 75 85 100
1024x768	16bpp 32bpp	60 75 85 100 60 75 85 100
1280x1024	16bpp 32bpp	60 75 85 100 60 75 85 100
1400x1050	16bpp 32bpp	60 75 85 100 60 75 85 100
1600x1200	16bpp 32bpp	60 75 85 100 60
1920x1440	16bpp 32bpp	60 60

Appendix E

If your computer is stolen

Always take care of your computer and try to prevent it from being stolen. You are the owner of a valuable technical device, which may be highly attractive to thieves, so please do not leave it unattended in a public place. To further help protect against theft, security cables can be bought for use with your notebook when it is being used at home or in the office.

Make a note of your computer's machine type, model number, and serial number, and put it in a safe place. You will find this information on the underside of your notebook. Please also keep the receipt of the computer you purchased.

Should your computer be stolen, however, we'll help you try to find it. Before contacting TOSHIBA, please prepare the following information which is necessary to uniquely identify your computer:

- In which country was your computer stolen?
- What type of machine do you have?
- What was the model number (PA number)?
- What was the serial number (8 digits)?
- When was it stolen, i.e. date?
- What was the warranty seal number (if available)?
- What is your address, phone, and fax number?

To register the theft, please follow these procedures:

- Fill in the TOSHIBA Theft Registration form (or a copy of it) below.
- Attach a copy of your receipt showing where your computer was purchased.
- Either fax or send the receipt and registration form to the address below.

Your registration will be entered in a database, which is used to track TOSHIBA computers at our service points around Europe.

TOSHIBA Theft Registration

Send to: TOSHIBA Europe GmbH
Technical Service and Support
Leibnizstr. 2
93055 Regensburg
Germany

Fax number: +49 (0) 941 7807 925

Country stolen:	
Machine type: (e.g. Satellite A30)	
Model number: (e.g. PSA10E YXT)	
Serial number: (e.g. 70123456E)	
Date stolen:	
Warranty seal: (e.g. 9813 123456 049)	

Owner's details

Name:	
Company:	
Street:	
Postal Code/City:	
Country:	
Phone:	
Fax:	

Appendix F

ASCII Character Codes

This appendix shows the American Standard Code for Information Interchange (ASCII) on the following pages. The characters in the **IBM char** column appear on your display when you type the corresponding ASCII code (as described in Chapter 5, *The Keyboard*). The characters that are printed, however, depend on the software you are using. For most software, the printed output for decimal codes 32 to 128 will match your screen display.

Dec code	Hex code	IBM char	Sort seq	Ctrl char
000	00		000	NUL
001	01	☺	1	SOH
002	02	☻	2	STX
003	03	♥	3	ETX
004	04	♦	4	EOT
005	05	♣	5	ENQ
006	06	♠	6	ACK
007	07	•	7	BEL
008	08	◘	8	BS
009	09	○	9	HT
010	0A	◙	10	LF
011	0B	♂	11	VT
012	0C	♀	12	FF
013	0D	♪	13	CR
014	0E	♫	14	SO
015	0F	☼	15	SI
016	10	►	16	DLE
017	11	◄	17	DC1
018	12	↕	18	DC2
019	13	!!	19	DC3
020	14	¶	20	DC4
021	15	§	21	NAK
022	16	▬	22	SYN
023	17	↨	23	ETB
024	18	↑	24	CAN
025	19	↓	25	EM
026	1A	→	26	SUB
027	1B	←	27	ESC
028	1C	└	28	FS
029	1D	↔	29	GS
030	1E	▲	30	RS
031	1F	▼	31	US

Dec code	Hex code	IBM char	Sort seq
032	20	space	32
033	21	!	33
034	22	"	34
035	23	#	35
036	24	$	36
037	25	%	37
038	26	&	38
039	27	'	39
040	28	(	40
041	29	)	41
042	2A	*	42
043	2B	+	43
044	2C	,	44
045	2D	-	45
046	2E	.	46
047	2F	/	47
048	30	0	48
049	31	1	49
050	32	2	50
051	33	3	51
052	34	4	52
053	35	5	53
054	36	6	54
055	37	7	55
056	38	8	56
057	39	9	57
058	3A	:	58
059	3B	;	59
060	3C	<	60
061	3D	=	61
062	3E	>	62
063	3F	?	63

Dec code	Hex code	IBM char	Sort seq
064	40	@	64
065	41	A	65
066	42	B	66
067	43	C	67
068	44	D	68
069	45	E	69
070	46	F	70
071	47	G	71
072	48	H	72
073	49	I	73
074	4A	J	74
075	4B	K	75
076	4C	L	76
077	4D	M	77
078	4E	N	78
079	4F	O	79
080	50	P	80
081	51	Q	81
082	52	R	82
083	53	S	83
084	54	T	84
085	55	U	85
086	56	V	86
087	57	W	87
088	58	X	88
089	59	Y	89
090	5A	Z	90
091	5B	[	91
092	5C	\	92
093	5D	]	93
094	5E	^	94
095	5F	_	95

Dec code	Hex code	IBM char	Sort seq
096	60	′	96
097	61	a	97
098	62	b	98
099	63	c	99
100	64	d	100
101	65	e	101
102	66	f	102
103	67	g	103
104	68	h	104
105	69	i	105
106	6A	j	106
107	6B	k	107
108	6C	l	108
109	6D	m	109
110	6E	n	110
111	6F	o	111
112	70	p	112
113	71	q	113
114	72	r	114
115	73	s	115
116	74	t	116
117	75	u	117
118	76	v	118
119	77	w	119
120	78	x	120
121	79	y	121
122	7A	z	122
123	7B	{	123
124	7C	¦	124
125	7D	}	125
126	7E	~	126
127	7F	⌂	127

Dec code	Hex code	IBM char	Sort seq
128	80	Ç	67
129	81	ü	85
130	82	é	69
131	83	â	65
132	84	ä	65
133	85	à	65
134	86	å	65
135	87	ç	67
136	88	ê	69
137	89	ë	69
138	8A	è	69
139	8B	ï	73
140	8C	î	73
141	8D	ì	73
142	8E	Ä	65
143	8F	Å	65
144	90	É	69
145	91	æ	65
146	92	Æ	65
147	93	ô	79
148	94	ö	79
149	95	ò	79
150	96	û	85
151	97	ù	85
152	98	ÿ	89
153	99	Ö	79
154	9A	Ü	85
155	9B	¢	36
156	9C	£	36
157	9D	¥	36
158	9E	Pt	36
159	9F	*f*	36

Dec code	Hex code	IBM char	Sort seq
160	A0	á	65
161	A1	í	73
162	A2	ó	79
163	A3	ú	85
164	A4	ñ	78
165	A5	Ñ	78
166	A6	ā	166
167	A7	ō	167
168	A8	¿	63
169	A9	⌐	169
170	AA	¬	170
171	AB	½	171
172	AC	¼	172
173	AD	¡	33
174	AE	«	34
175	AF	»	34
176	B0	▒	
177	B1	▒	
178	B2	▒	
179	B3	│	
180	B4	┤	
181	B5	╡	
182	B6	╢	
183	B7	╖	
184	B8	╕	
185	B9	╣	
186	BA	║	
187	BB	╗	
188	BC	╝	
189	BD	╜	
190	BE	╛	
191	BF	┐	

Dec code	Hex code	IBM char	Sort seq
192	C0	└	
193	C1	┴	
194	C2	┬	
195	C3	├	
196	C4	─	
197	C5	┼	
198	C6	╞	
199	C7	╟	
200	C8	╚	
201	C9	╔	
202	CA	╩	
203	CB	╦	
204	CC	╠	
205	CD	═	
206	CE	╬	
207	CF	╧	
208	D0	╨	
209	D1	╤	
210	D2	╥	
211	D3	╙	
212	D4	╘	
213	D5	╒	
214	D6	╓	
215	D7	╫	
216	D8	╪	
217	D9	┘	
218	DA	┌	
219	DB	▉	
220	DC	▄	
221	DD	▌	
222	DE	▐	
223	DF	▀	

Dec code	Hex code	IBM char	Sort seq
224	E0	α	
225	E1	ß	83
226	E2	Γ	
227	E3	Π	
228	E4	Σ	
229	E5	σ	
230	E6	µ	
231	E7	ϒ	
232	E8	Φ	
233	E9	Θ	
234	EA	Ω	
235	EB	δ	
236	EC	φ	
237	ED	ϕ	
238	EE	E	
239	EF	Λ	
240	F0	Ξ	
241	F1	±	
242	F2	≥	
243	F3	≤	
244	F4	⌠	
245	F5	⌡	
246	F6	÷	
247	F7	≈	
248	F8	°	
249	F9	∙	
250	FA	·	
251	FB	√	
252	FC	η^2	
253	FD		
254	FE	■	
255	FF		

Glossary

The terms in this glossary cover topics related to this manual. Alternate naming is included for reference.

A

adaptor: A device that provides an interface between two dissimilar electronic devices. For example, the AC adaptor modifies the power from a wall outlet for use by the computer. This terms also refers to the add-in circuit cards that control external devices, such as video monitors and magnetic tape devices.

allocate: To assign a space or function for a specific task.

alphanumeric: Keyboard characters including letters, numbers and other symbols, such as punctuation marks or mathematical symbols.

alternating current (AC): Electric current that reverses its direction of flow at regular intervals.

analogue signal: A signal whose characteristics such as amplitude and frequency vary in proportion to (are an analogue of) the value to be transmitted. Voice communications are analogue signals.

ANSI: American National Standards Institute. An organisation established to adopt and define standards for a variety of technical disciplines. For example, ANSI defined the ASCII standard and other information processing requirements.

antistatic: A material used to prevent the build-up of static electricity.

application: A group of programs that together are used for a specific task such as accounting, financial planning, spreadsheets, word processing, and games, etc.

ASCII: American Standard Code for Information Interchange. ASCII code is a set of 256 binary codes that represent the most commonly used letters, numbers, and symbols.

async: Short for asynchronous.

asynchronous: Lacking regular time relationship. As applied to computer communications, asynchronous refers to the method of transmitting data that does not require a steady stream of bits to be transmitted at regular time intervals.

AUTOEXEC.BAT: A batch file that executes a series of MS-DOS commands and programs each time you start the computer. This is no longer necessarily used when booting Windows NT 4.0 and higher.

B

backup: A duplicate copy of files kept as a spare in case the original is destroyed.

batch file: A file that can be executed from the system prompt containing a sequence of operating system commands or executable files. *See also* AUTOEXEC.BAT.

billion byte (Bi.B): A unit of data storage equal to 1,000,000,000 bytes. *See also* million byte.

binary: The base two number system composed of zeros and ones (off or on), used by most digital computers. The right most digit of a binary number has a value of 1, the next a value of 2, then 4, 8, 16, and so on. For example, the binary number 101 has a value of 5. *See also* ASCII.

BIOS: Basic Input Output System. The firmware that controls data flow within the computer. *See also* firmware.

bit: Derived from "binary digit," the basic unit of information used by the computer. It is either zero or one. Eight bits is one byte. *See also* byte.

Bluetooth: A short-range radio technology designed to simplify wireless communication among computers, communication devices and the Internet.

board: A circuit board. An internal card containing electronic components, called chips, which perform a specific function or increase the capabilities of the system.

boot: Short for bootstrap. A program that starts or restarts the computer. The program reads instructions from a storage device into the computer's memory.

bps: Bits per second. Typically used to describe the data transmission speed of a modem.

buffer: The portion of the computer's memory where data is temporarily stored. Buffers often compensate for differences in the rate of flow from one device to another.

bus: An interface for transmission of signals, data or electric power.

byte: The representation of a single character. A sequence of eight bits treated as a single unit; also the smallest addressable unit within the system.

C

cache memory: High speed memory which stores data that increases processor speed and data transfer rate. When the CPU reads data from main memory, it stores a copy of this data in cache memory. The next time the CPU needs that same data, it looks for it in the cache memory rather than the main memory, which saves time. The computer has two cache levels. Level one is incorporated into the processor and level two resides in external memory.

capacity: The amount of data that can be stored on a magnetic storage device such as a diskette (floppy disk) or hard disk. It is usually described in terms of kilobytes (KB), where one KB = 1024 bytes and megabytes (MB), where one MB = 1024 KB.

Card Station II: A device that enables one-point connection to a number of peripheral devices and provides additional ports and slots.

card: Synonym for board. *See* board.

CardBus: An industry standard bus for 32-bit PC Cards.

CD-ROM: A Compact Disc-Read Only Memory is a high capacity disc that can be read from but not written to. The CD-ROM drive uses a laser, rather than magnetic heads, to read data from the disc.

CD-RW: A Compact Disc-Read/Write disc can be rewritten many times.

Centronics: A printer manufacturer whose method of data transmission between a parallel printer and a computer has become an industry standard.

CGA: Colour/graphics adaptor. A video display protocol defined by the IBM Colour/Graphics Monitor Adaptor and its associated circuitry. This protocol supports two-colour 640x200 and four-colour 320x200 graphics, and 16-colour 640x200 and 320x200 text modes.

character: Any letter, number, punctuation mark, or symbol used by the computer. Also synonymous with byte.

chassis: The frame containing the computer.

chip: A small semiconductor containing computer logic and circuitry for processing, memory, input/output functions and controlling other chips.

CMOS: Complementary Metal-Oxide Semiconductor. An electronic circuit fabricated on a silicon wafer that requires very little power. Integrated circuits implemented in CMOS technology can be tightly packaged and are highly reliable.

cold start: Starting a computer that is currently off (turning on the power).

COM1, COM2, COM3 and COM4: The names assigned to the serial and communication ports.

commands: Instructions you enter at the terminal keyboard that direct the actions of the computer or its peripheral devices.

communications: The means by which a computer transmits and receives data to and from another computer or device.

Compact Flash: A small removable mass storage device, designed with flash technology, a non-volatile storage solution that does not require a battery to retain data indefinitely.

compatibility: 1) The ability of one computer to accept and process data in the same manner as another computer without modifying the data or the media upon which it is being transferred. 2) the ability of one device to connect to or communicate with another system or component.

components: Elements or parts (of a system) which make up the whole (system).

computer program: A set of instructions written for a computer that enable it to achieve a desired result.

computer system: A combination of hardware, software, firmware, and peripheral components assembled to process data into useful information.

configuration: The specific components in your system (such as the terminal, printer, and disk drives) and the settings that define how your system works. You use the HW Setup program to configure your system.

control keys: A key or sequence of keys you enter from the keyboard to initiate a particular function within a program.

controller: Built-in hardware and software that controls the functions of a specific internal or peripheral device (e.g. keyboard controller).

CPS: Characters per second. Typically used to indicate the transmission speed of a printer.

CPU: Central processing unit. The portion of the computer that interprets and executes instructions.

CRT: Cathode Ray Tube. A vacuum tube in which beams projected on a fluorescent screen-producing luminous spots. An example is the television set.

cursor: A small, blinking rectangle or line that indicates the current position on the display screen.

D

data bits: A data communications parameter controlling the number of bits (binary digits) used to make up a byte. If data bits = 7 the computer can generate 128 unique characters. If data bits = 8 the computer can generate 256 unique characters.

data: Information that is factual, measurable or statistical that a computer can process, store, or retrieve.

DC: Direct Current. Electric current that flows in one direction. This type of power is usually supplied by batteries.

default: The parameter value automatically selected by the system when you or the program do not provide instructions. Also called a preset value.

delete: To remove data from a disk or other data storage device. Synonymous with erase.

Desk Station V Plus: An expansion device that provides the computer with additional ports, slots and bays.

device driver: A program that controls communication between a specific peripheral device and the computer. The CONFIG.SYS file contains device drivers that MS-DOS loads when you turn the computer on.

dialog box: A Windows element that requires the user to provide further information, such as number of copies to print.

disk drive: The device that randomly accesses information on a disk and copies it to the computer's memory. It also writes data from memory to the disk. To accomplish these tasks, the unit physically rotates the disk at high speed past a read-write head.

disk storage: Storing data on magnetic disk. Data is arranged on concentric tracks much like a phonograph record.

diskette: A removable disk that stores magnetically encoded data used on a microcomputer. Also called floppy disk.

display: A CRT, plasma screen, LCD, or other image producing device used to view computer output.

documentation: The set of manual and/or other instructions written for the users of a computer system or application. Computer system documentation typically includes procedural and tutorial information as well as system functions.

driver: A software program, generally part of the operating system, that controls a specific piece of hardware (frequently a peripheral device such as a printer or mouse).

dual-scan supertwisted nematic (DSTN) display: A thin-screen, passive matrix colour LCD that meets VGA standards.

DVD-R: A Digital Versatile Disc-Recordable disk can be written once and read many times.

DVD-RAM: A Digital Versatile Disc Random Access Memory is a high-capacity, high performance disc that lets you store large volumes of data. The DVD drive uses a laser to read data from the disc.

DVD-ROM: A Digital Versatile Disc Read Only Memory is a high capacity, high performance disc suitable for play back of video and other high-density files. The DVD drive uses a laser to read data from the disc.

DVD-RW: A Compact Disc-Read/Write disc can be rewritten many times.

E

echo: To send back a reflection of the transmitted data to the sending device. You can display the information on the screen, or output it to the printer, or both. When a computer receives back data it transmitted to a CRT (or other peripheral device) and then retransmits the data to printer, the printer is said to echo the CRT.

EGA: Enhanced Graphics Adaptor. A video display protocol defined by the IBM Enhanced Graphics Adaptor and its associated circuitry for direct drive TTL displays that supports 16-colour/monochrome 640x350 and 16-colour 640x200 and 320x200 graphics, and 16-colour 640x350 and 320x350 text modes.

erase: *See* delete.

escape guard time: A time before and after an escape code is sent to the modem which distinguishes between escapes that are part of the transmitted data, and escapes that are intended as a command to the modem.

escape: 1) A code (ASCII code 27), signalling the computer that what follows are commands; used with peripheral devices such as printers and modems. 2) A means of aborting the task currently in progress.

execute: To interpret and execute an instruction.

Extended Capability Port: An industry standard that provides a data buffer, switchable forward and reverse data transmission, and run length encoding (RLE) support.

F

fast infrared: An industry standard that enables cableless infrared serial data transfer at speeds of up to 4 Mbps.

file: A collection of related information; a file can contain data, programs, or both.

firmware: A set of instructions built into the hardware which controls and directs a microprocessor's activities.

fixed disk: *See* hard disk.

floppy disk drive (FDD): An electromechanical device that reads and writes to floppy disks. *See also* diskette.

floppy disk: *See* diskette.

folder: An icon in Windows used to store documents or other folders.

format: The process of readying a blank disk for its first use. Formatting establishes the structure of the disk that the operating system expects before it writes files or programs onto the disk.

function keys: The keys labelled **F1** through **F12** that tell the computer to perform certain functions.

G

gigabyte (GB): A unit of data storage equal to 1024 megabytes. *See also* megabyte.

GND: Ground. An RS-232C signal used in the exchange of data between a computer and serial device.

graphics: The use of drawings, pictures, or other images, such as charts or graphs, to present information.

H

hard disk drive (HDD): An electromechanical device that reads and writes a hard disk. *See also* hard disk.

hard disk: A non-removable disk usually referred to as drive C. The factory installs this disk and only a trained engineer can remove it for servicing. Also called fixed disk.

hardware: The physical electronic and mechanical components of a computer system: typically, the computer itself, external disk drives, etc. *See also* software and firmware.

HW Setup: A TOSHIBA utility that lets you set the parameters for various hardware components.

hertz: A unit of wave frequency that equals one cycle per second.

hexadecimal: The base 16 numbering system composed of the digits 0 through 9 and the letters A, B, C, D, E, and F.

host computer: The computer that controls, regulates, and transmits information to a device or another computer.

hotkey: A TOSHIBA feature in which certain keys in combination with the extended function key, **Fn**, can be used to set system parameters, such as speaker volume.

I

I/O devices: Equipment used to communicate with the computer and transfer data to and from it.

I/O: Input/output. Refers to acceptance and transfer of data to and from a computer.

icon: A small graphic image displayed on the screen or in the indicator panel. In Windows, an icon represents an object that the user can manipulate.

infrared port: A cableless communications port capable of using infrared signals to send serial data.

input: The data or instructions you provide to a computer, communication device or other peripheral device from the keyboard or external or internal storage devices. The data sent (or output) by the sending computer is input for the receiving computer.

instruction: Statements or commands that specify how to perform a particular task.

interface: 1) Hardware and/or software components of a system used specifically to connect one system or device to another. 2) To physically connect one system or device to another to exchange information. 3) The point of contact between user, the computer, and the program, for example, the keyboard or a menu.

interrupt request: A signal that gives a component access to the processor.

IrDA 1.1: An industry standard that enables cableless infrared serial data transfer at speeds of up to 4 Mbps.

K

K: Taken from the Greek word kilo, meaning 1000; often used as equivalent to 1024, or 2 raised to the 10th power. *See also* byte and kilobyte.

KB: *See* kilobyte.

keyboard: An input device containing switches that are activated by manually pressing marked keys. Each keystroke activates a switch that transmits a specific code to the computer. For each key, the transmitted code is, in turn, representative of the (ASCII) character marked on the key.

kilobyte (KB): A unit of data storage equal to 1024 bytes. *See also* byte and megabyte.

L

level 2 cache: *See* cache.

Light Emitting Diode (LED): A semiconductor device that emits light when a current is applied.

Liquid Crystal Display (LCD): Liquid crystal sealed between two sheets of glass coated with transparent conducting material. The viewing-side coating is etched into character forming segments with leads that extend to the edge of the glass. Applying a voltage between the glass sheets alters the brightness of the liquid crystal.

LSI: Large Scale Integration. 1) A technology that allows the inclusion of up to 100,000 simple logic gates on a single chip. 2) An integrated circuit that uses the large scale integration.

M

magiCDisc: A TOSHIBA utility that lets you create a CD-ROM data base for quick access to CD-ROM data.

main board: See motherboard.

maths co-processor: A circuit built into the processor that is dedicated to intensive math calculations.

MDA: Monochrome Display Adaptor. A video display protocol defined by the IBM Monochrome Display Adaptor and its associated circuitry for direct drive TTL displays that supports a monochrome 720x350 text mode.

megabyte (MB): A unit of data storage equal to 1024 kilobytes. *See also* kilobyte.

megahertz: A unit of wave frequency that equals 1 million cycles per second. *See also* hertz.

Memory Stick: An IC recording media designed to record various kinds of digital content such as still and moving images, music and computer data on a single stick.

menu: A software interface that displays a list of options on the screen. Also called a screen.

microprocessor: A hardware component contained in a single integrated circuit that carries out instructions. Also called the central processing unit (CPU), one of the main parts of the computer.

million byte: A unit of data storage equal to 1,000,000 bytes.

MMX: Refers to microprocessors with additional instructions beyond the x86 standard. The instructions were developed on the basis of multimedia code requirements and thus improve the performance of multimedia applications.

mode: A method of operation, for example, the boot mode, standby mode or the hibernation mode.

modem: Derived from modulator/demodulator, a device that converts (modulates) digital data for transmission over telephone lines and then converts modulated data (demodulates) to digital format where received.

monitor: A device that uses rows and columns of pixels to display alphanumeric characters or graphic images. *See* CRT.

motherboard: A name sometimes used to refer to the main printed circuit board in processing equipment. It usually contains integrated circuits that perform the processor's basic functions and provides connectors for adding other boards that perform special functions. Sometimes called a main board.

MPEG: Moving picture coding expert group is an industry standard architecture for compression of video signals.

MP3: An audio compression standard that enables high-quality transmission and real-time playback of sound files.

N

non-system disk: A formatted diskette (floppy disk) you can use to store programs and data but you cannot use to start the computer. *See* system disk.

non-volatile memory: Memory, usually read-only (ROM), that is capable of permanently storing information. Turning the computer's power off does not alter data stored in non-volatile memory.

numeric keypad overlay: A feature that allows you to use certain keys on the keyboard to perform numeric entry, or to control cursor and page movement.

O

OCR: Optical Character Recognition (reader). A technique or device that uses laser or visible light to identify characters and input them into a storage device.

OCR wand: A device that reads, using an optical device, hand written or machine printed symbols into a computer. *See also* OCR.

on-line state: A functional state of a peripheral device when it is ready to receive or transmit data.

operating system: A group of programs that controls the basic operation of a computer. Operating system functions include interpreting programs, creating data files, and controlling the transmission and receipt (input/output) of data to and from memory and peripheral devices.

output: The results of a computer operation. Output commonly indicates data 1) printed on paper, 2) displayed at a terminal, 3) sent through the serial port of internal modem, or 4) stored on some magnetic media.

P

parallel interface: Refers to a type of information exchange that transmits information one byte (8 bits) at a time. *See also* serial interface.

parallel: Refers to two or more processes or events that can occur simultaneously, and without interfering with each other. *See also* serial.

parity: 1) The symmetrical relationship between two parameter values (integers) both of which are either on or off; odd or even; 0 or 1. 2) In serial communications, an error detection bit that is added to a group of data bits making the sum of the bits even or odd. Parity can be set to none, odd, or even.

password: A unique string of characters used to identify a specific user. The computer provides various levels of password protection such as user, supervisor and eject.

pel: The smallest area of the display that can be addressed by software. Equal in size to a pixel or group of pixels. *See* pixel.

peripheral component interconnect: An industry standard 32-bit bus.

peripheral device: An I/O device that is external to the central processor and/or main memory such as a printer or a mouse.

pixel: A picture element. The smallest dot that can be made on a display or printer. Also called a pel.

port replicator: *See* Card Station II.

port: The electrical connection through which the computer sends and receives data to and from devices or other computers.

Power Saver Utility: A TOSHIBA utility that lets you set the parameters for various power-saving functions.

printed circuit board (PCB): A hardware component of a processor to which integrated circuits and other components are attached. The board itself is typically flat and rectangular, and constructed of fibreglass, to form the attachment surface.

program: A set of instructions a computer can execute that enables it to achieve a desired result. See also application.

prompt: A message the computer provides indicating it is ready for or requires information or an action from you.

R

Radio frequency interference (RFI) shield: A metal shield enclosing the printed circuit boards of the printer or computer to prevent radio and TV interference. All computer equipment generates radio frequency signals. The FCC regulates the amount of signals a computing device can allow past its shielding. A Class A device is sufficient for office use. Class B provides a more stringent classification for home equipment use. TOSHIBA portable computers comply with Class B computing device regulations.

RAMDRIVE: Part of the computer's random access memory assigned to simulate a disk. RAMDRIVE is a feature of MS-DOS.

Random Access Memory (RAM): High speed memory within the computer circuitry that can be read or written to.

RCA jack: A single-pin connector that carries composite video signals, which include both contrast and colour information. *See also* S-video.

restart: Resetting a computer without turning it off (also called 'warm boot' or 'soft reset'). To restart the computer, press **Ctrl + Alt + Del** while the computer is on. *See also* boot.

resume: A feature that lets you turn off the power without first exiting a program and retain your data in RAM. When you turn on the computer, the screen appears the same as when you turned it off. Also called standby in Windows 98.

RGB: Red, green, and blue. A device that uses three input signals, each activating an electron gun for a primary additive colour (red, green, and blue) or port for using such a device. *See also* CRT.

RJ11: A modular telephone jack.

ROM: Read Only Memory: A non-volatile memory chip manufactured to contain information that controls the computer's basic operation. You cannot access or change information stored in ROM.

RS-232C: The Electronic Industries Association (EIA) interface standard that describes the 25-pin connector interface and control, data, and status signals that allow asynchronous communications between computers, printers, communications and other peripheral devices.

S

SCSI: Small Computer System Interface is an industry standard interface for connection of a variety of peripheral devices.

SD cards: Secure Digital cards are flash memory widely used in a variety of digital devices such as digital cameras and Personal Digital Assistants.

serial port: A communications port to which you can connect devices, such as a modem, mouse, or serial printer.

serial: The handling of data bits one after the other.

SIO: Serial Input/Output. The electronic methodology used in serial data transmission.

Smart media: A storage card of about one-thirds of the area of a conventional PC card and only 0.76mm thickness. It can be used in equipment that requires a removable memory chip for portability.

soft key: Key combinations that emulate keys on the IBM keyboard, change some configuration options, stop program execution, and access the numeric keypad overlay.

software: The set of programs, procedures and related documentation associated with a computer system. Specifically refers to computer programs that direct and control the computer system's activities. *See also* hardware.

standby: *See* resume.

stop bit: One or more bits of a byte that follow the transmitted character or group codes in asynchronous serial communications.

subpixel: Three elements, one red, one green and blue (RGB), that make up a pixel on the colour LCD. The computer sets subpixels independently, each may emit a different degree of brightness. *See also* pixel.

suspend: *See* resume.

S-video: This connection provides separate lines for contrast and colour, which produces a video image superior to that produced by a composite connection. *See also* RCA jack.

synchronous: Having a constant time interval between successive bits, characters or events.

system disk: A disk that has been formatted with an operating system. For MS-DOS the operating system is contained in two hidden files and the COMMAND.COM file. You can boot a computer using a system disk. Also called an operating system disk.

T

terminal: A typewriter-like keyboard and CRT display screen connected to the computer for data input/output.

TFT: Thin-film transistor. A colour LCD technology that applies individual transistors to each pixel enabling fine display control and excellent screen legibility.

touch pad: A pointing device integrated into the TOSHIBA computer palm rest.

TTL: Transistor-transistor logic. A logic circuit design that uses switching transistors for gates and storage.

U

USB: The *Universal Serial Bus* is a way to connect up to 127 devices through one connector. A new development in 1997, this offers significantly improved ease of use and reliability than earlier expansion methods.

V

VGA: Video Graphics Array is an industry standard video adaptor that lets you run any popular software.

volatile memory: Random access memory (RAM) that stores information as long as the computer is connected to a power source.

W

warm start: Restarting or resetting a computer without turning it off.

window: A portion of the screen that can display its own application or document. Often used to mean a Microsoft Windows window.

wireless LAN: Local Area Network (LAN) through wireless communication. A short-range radio technology designed to simplify wireless communication with other LAN systems based on Direct Sequence Spread Spectrum radio technology that complies with the IEEE 802.11 Standard (Revision B).

write protection: A method for protecting a diskette (floppy disk) from accidental erasure.

Z

ZV port: Zoomed Video port dedicated to high-performance video data transfer.

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